The Report Committee for Lauren Sheagbe Flemister
Certifies that this is the approved version of the following report:

Context-Dependent Interventions: Understanding Change through Urban Morphological Studies of Informal Settlements in Nairobi, Kenya

APPROVED BY
SUPERVISING COMMITTEE:

Supervisor:

Sarah Dooling

Robert Wilson

Context-Dependent Interventions: Understanding Change through Urban Morphological Studies of Informal Settlements in Nairobi, Kenya

by

Lauren Flemister, A.B.; M.Arch.

Report

Presented to the Faculty of the Graduate School of

The University of Texas at Austin

in Partial Fulfillment

of the Requirements

for the Degrees of

Master of Public Affairs

and

Master of Science in Community and Regional Planning

The University of Texas at Austin

August 2012

Dedication

To my father, a planner, whose shoes I am following in. I never even fully realized what profession he was in until I was an adult. But I always knew that his profession meant to him. His passion was apparent to me as a child and I somehow understood that he thought his efforts mattered and could change a small part of the world. Almost 18 years after his death, it has fundamentally shaped how I value my choice of profession and career.

And, to my mother, who has been an amazing example of strength, dedication, commitment, and love. Somehow, she always held it together and gave everything while making it look effortless. I remain impressed and in awe.

Acknowledgements

First and foremost, my deepest thanks go to my dear family for supporting me through the writing of this report and more importantly, through my entire education. It has been a bumpy journey with fits and starts resulting in a couple breaks and changes of direction, but you always trusted I knew what I was doing, kind of.

Specifically, I want to give special praise to my mom, for never accepting excuses or self-satisfaction and always pushing me because you believed I could always do better. I would be remiss if I did not give a special mention to my Aunt Clara ("Dear"), for all the timely editing and words of love and support, typically at the 11th hour.

To all of my friends, for being so intelligent and motivating. I have pretty impressive people to try to keep up with, but especially Dennis, for knowing a real planning topic when he sees one!

To all the residents of Mathare, who took the time to answer my questions at great length. To the professors and lecturers at University of Nairobi and Kenya Polytechnic for being so helpful. And to Felix, for guiding me around Nairobi and saving me a few shillings.

Lastly, to my supervisors, for helping me redirect and focus my efforts by supporting me through a sometimes erratic process. This was much harder than I expected. I would especially like to single out Prof. Dooling, whose incisive thinking and demanding editing have greatly aided me through a mentally rigorous process.

Abstract

Context-Dependent Interventions: Understanding Change through Urban Morphological Studies of Informal Settlements in Nairobi, Kenya

Lauren Sheagbe Flemister, M.P.Aff.; M.S.C.R.P.

The University of Texas at Austin, 2012

Supervisor: Sarah Dooling

Informal human settlements, often so large that they are cities onto themselves, have been absent from urban morphological study. As the population of the urban world grows, hundreds of millions of people live in informal settlements. This report attempts to present why it is important to understand how, why, and where informal human settlements form, as well as how they evolve, and conditions for their emergence and evolution. Each region and individual city has its own varied economic, political, cultural, historical, environmental and legal issues and concerns. Such issues in certain areas of cities, including slums, pose unique challenges for governments, non-governmental organizations, non-profits, and community-based organizations. Each stands to benefit from critical analyses that not only indentify and understand informal settlements more historically, sociologically, and spatially, but that inform plans that effectively harness limited national and international

resources towards carefully targeted interventions. The focus of such interventions could include slum upgrading or assistance to secure land tenure, based on a deeper knowledge that increases efficacy.

In Nairobi, one of the oldest and largest informal settlements, Mathare, provides an opportunity for historical analysis. Through seven interviews with researchers, government bureaucrats, and residents, visually observing villages in Mathare, and analyzing archival maps, this report has identified factors driving change and the resulting impacts on the urban morphology of informal settlements in the African context. Various factors dealing with cultural, environmental, political/economic, and legal/regulatory issues are discussed. These data substantiate land tenure, speculative investment, tenancy insecurity, and government administrative structure as the issues that most directly drive emergence and growth of informal settlements. These issues date back to the earliest days of Nairobi, where African workers lived on land owned by their employers. These workers were denied access to land ownership, tenancy rights, and dwelling improvement through legal, economic, and institutionalized prejudice and coercion. Little has changed, as colonial-aged government administration and systemic disadvantage still determine the development of Nairobi's informal settlements.

Table of Contents

List of Figures

UNDERSTANDING INFORMAL SETTLEMENTS IN AN AFRICAN COLONIAL CITY

Introduction: The Meaning of the Informal City in an African Metropolis

Fig. 1 Bird's Eye View of Mathare 3A (Photograph by Author, 2012.)

STATEMENT OF THE PROBLEM

Densely populated human settlements have existed for millennia in all corners of the planet. Man has a natural urge to create shelter, often within a community of other people. These were the early cities. The onset of industrialization and urbanization introduced small, medium, large, and mega-

cities. These cities are composed of dynamic systems with infrastructure, buildings, social networks and technological workings. In addition to these physical elements that shape the city, there are also legal and administrative frameworks that inform how a city runs. These all contribute to the creation, spatial organization, and evolution of the city.

Urban informal human settlements are a large-scale, self-help solution to providing affordable housing for low-income people in cities where the competition for land and profits is intense (United Nations Human Settlements Programme xxix). Often so large that they are like cities onto themselves, informal settlements have been absent from most urban morphological studies (Duarte 138). They show obvious “urban tissue (Duarte 138)” with street grids and clearly delineated public and private space. Others are less regularized and while they may be organic, there are always environmental, topographical, or legal issues that influence spatial conditions. It is also profoundly important to understand the formation and evolution of informal settlements, since there are always limited resources to upgrade them or find alternate dwellings. There is no reason to believe they will be going away. So it becomes essential to find ways to knit the informal and formal city fabric through infrastructure, economy, and social programs which are necessary to have a functional city (Duarte 139).

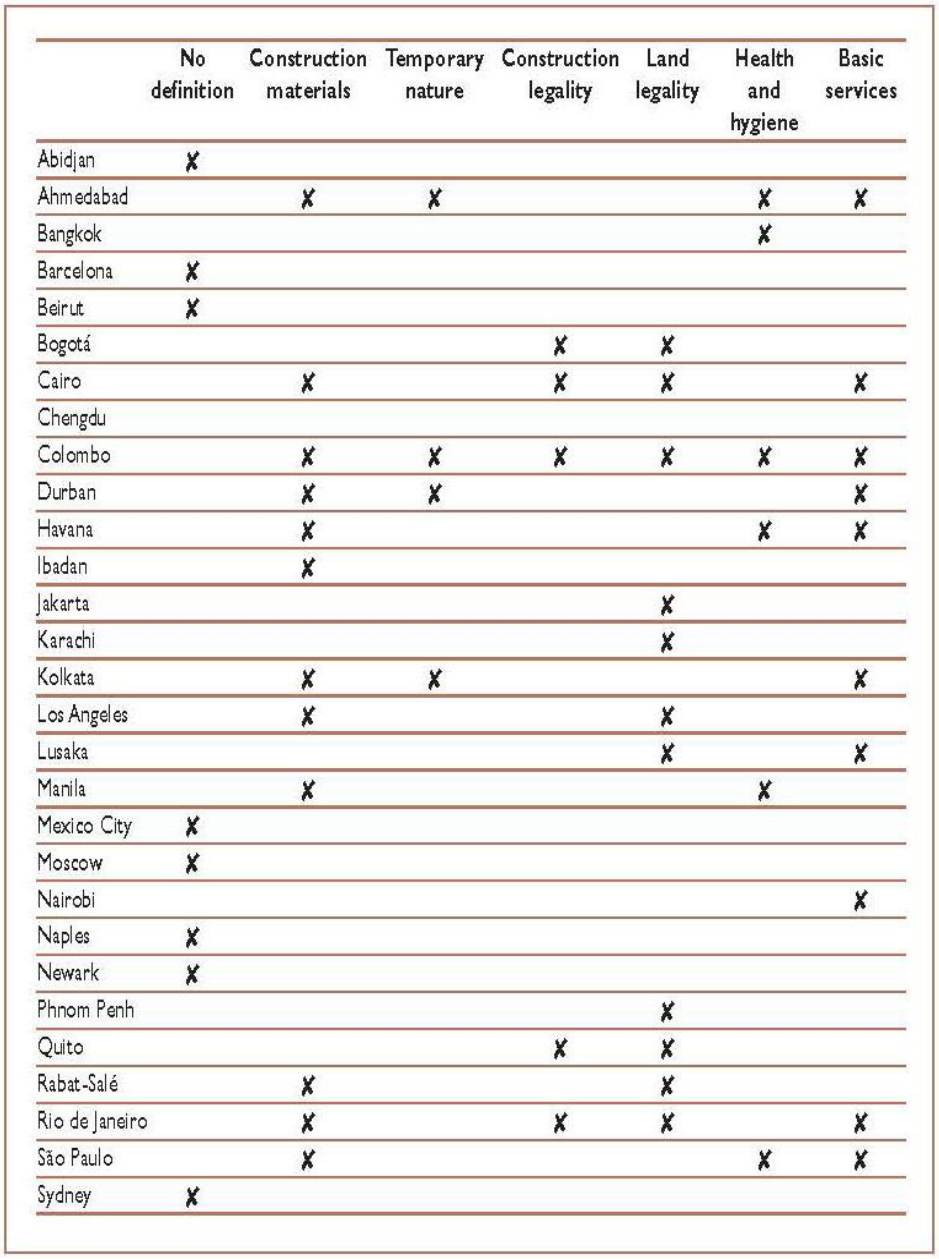
As the population of the urban world grows in the developing world and many hundreds of millions of people live in informal settlements, it becomes increasingly important to understand the conditions and circumstance under which these settlements were formed and evolved over time... The eradication of informal settlements poses untenable and sometimes impossible challenges

to governments' ability to address these issues, often outpaced and exceeded by the rate of urban growth and poverty. Since policy and planning can either alleviate ills or perpetuate harm to cities in response to rapid population growth perhaps the following assessment of this problem might provide some insight as to the most common aggravations of overpopulation are:

- a relatively long period of general laissez-faire attitude on the part of the an unsympathetic colonial structure coupled with and perhaps exacerbated by current urban authorities towards illegal occupation of urban lands and commensurate flouting of building regulations and/or of urban zoning prescriptions; and

- a general failure of housing and land markets to provide for the land and housing requirements of rapidly growing urban low-income populations in a timely fashion and in sufficient numbers and locations (United Nations Human Settlements Programme 195).

However, each region and individual city has its own issues and concerns; furthermore, certain areas of cities, including slums, have unique challenges that range from the infrastructural to the economic (See Fig. 2).



	No definition	Construction materials	Temporary nature	Construction legality	Land legality	Health and hygiene	Basic services
Abidjan	✘						
Ahmedabad		✘	✘			✘	✘
Bangkok						✘	
Barcelona	✘						
Beirut	✘						
Bogotá				✘	✘		
Cairo		✘		✘	✘		✘
Chengdu							
Colombo		✘	✘	✘	✘	✘	✘
Durban		✘	✘				✘
Havana		✘				✘	✘
Ibadan		✘					
Jakarta					✘		
Karachi					✘		
Kolkata		✘	✘				✘
Los Angeles		✘			✘		
Lusaka					✘		✘
Manila		✘				✘	
Mexico City	✘						
Moscow	✘						
Nairobi							✘
Naples	✘						
Newark	✘						
Phnom Penh					✘		
Quito				✘	✘		
Rabat-Salé		✘			✘		
Rio de Janeiro		✘		✘	✘		✘
São Paulo		✘				✘	✘
Sydney	✘						

Fig. 2 Types of Issues in Worldwide Informal Settlements (In The Challenge of Slums: Global Report on Human Settlements. By United Nations Programme on Human Settlements. Sterling, VA: UN-HABITAT/Earthscan, 2005, 197.

	Infrastructure	Crowding	Poverty	Low income	Environment	Compactness	Crime and violence
Abidjan							
Ahmedabad		✘				✘	
Bangkok		✘			✘		✘
Barcelona							
Beirut							
Bogotá							
Cairo							
Chengdu					✘		
Colombo							
Durban							
Havana	✘						
Ibadan	✘		✘	✘			
Jakarta				✘			
Karachi							
Kolkata		✘					
Los Angeles		✘					
Lusaka	✘			✘			
Manila		✘	✘				
Mexico City							
Moscow							
Nairobi	✘						
Naples							
Newark							
Phnom Penh					✘		
Quito							
Rabat-Salé							
Rio de Janeiro	✘	✘					
São Paulo	✘	✘					
Sydney							

Fig. 2, cont.

In short, the lessons of the historical context of the development of informal urban settlements are essential to developing future interventions. As entities from the World Bank and the United Nations to smaller non-profits plan slum-upgrading and other types of programs in informal settlements, this suggests changing the fabric of part of the informal settlements and by extension, the city based on richer context.

This leads to a series of questions that are important for these organizations. The knowledge that can be acquired from asking the questions about a settlement's history have potential impacts on the informal settlement dwellers whose lives are affected by these issues including land tenure, services, and government administration. Understanding the logic of governments, institutions, communities, and individuals and the resulting impacts reflects a network of decisions that impact the design and management of physical spaces. This network is connected to past decisions and older networks and also affects the networks that will emerge in the future (See Fig. 3). David Harvey, a geographer, writes extensively about the difficulties and the purpose of combining social and spatial research. Harvey believes that strong research in the areas of urbanization, migration, regional development, among other subjects would benefit from a connection between social processes and spatial forms. He further poses the question of whether spatial forms should be considered as unintended consequences of social processes or as constitutive of social processes. (Harvey 212). Harvey's responses focus on the difficulty of establishing a connection between space and social processes in a feedback loop; instead, he suggests that a philosophical shift considering space as a cultural construction across the organic, the perceptual, and the symbolic is

necessary to allow the consideration spatial form and social processes together to be generative (Harvey 213).

Harvey suggests that analyzing present social conditions and systems, as complex as they are, is not enough information to make sound decisions about slum-upgrading or planning or policy decisions that affect those living in informal settlements. How can spatial reconfigurations be suggested if the planners, architects and policymakers do not understand the constraints, parameters, and logic that went into the decisions that created the present spatial configuration? Essentially, the way we govern and the way we live affect the places we make. Informal settlements tend to be even more complex, as they are affected by both formal and informal interventions and often occur in cities that have indigenous and colonial fabrics intermeshed.

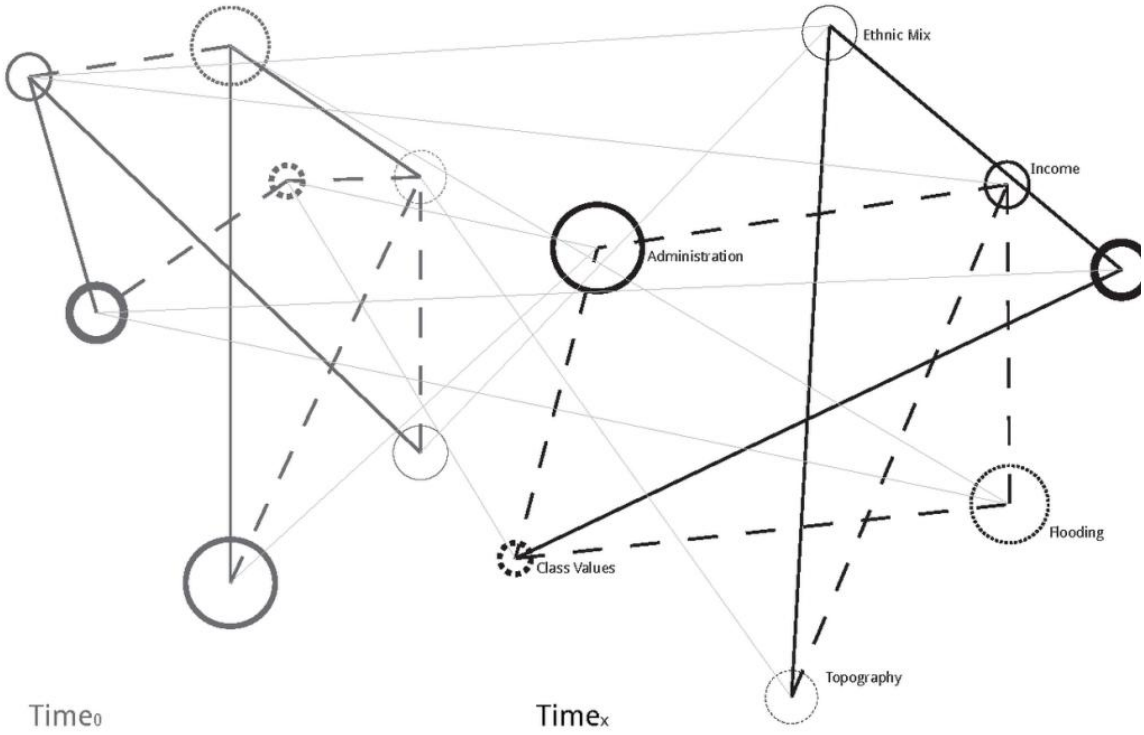


Fig. 3 Diagram of Factors Affecting Slum Morphology in Temporal Network
(Image by Author, 2012.)

RESEARCH QUESTIONS

The research questions seek to address the factors that are involved in spatial changes in informal settlements in Nairobi. Each large question led to a series of sub-questions which attempt to probe at the fundamental causes of change in Nairobi and in the case study informal settlement, Mathare. The primary questions are, in what conditions do informal settlements occur and in what conditions do informal settlements evolve? The subsequent questions seek to contextualize and consider measurement of the causes or factors that lead to change:

What legal/regulatory, economic, and cultural constraints affect the development of the informal parts of the city?

SCOPE AND DESCRIPTION OF THE STUDY

The analysis is three-fold and uses mixed methods. The literature aspect of the research explores the bodies of research in urban morphology in developing cities, informal settlements in Nairobi, and the history of the city of Nairobi, focusing on areas that give background to morphological change and establish connections between these ideas. This forms a foundation to analyze the creation and development in urban settlements based on urban morphological/urban geographical studies in Africa. Historical data are available about colonization and spatial perspectives, particularly as related to social and economic change.

Building codes, legislation, and other regulations are also available, dating back in some cases to pre-colonial times. Focusing on Nairobi, the literature review reveals factors that drive the emergence of informal settlements and served as catalysts to changes over time. This provides insight into the why of the morphology of the informal settlements.

The spatial observation portion of the research provides visual substantiation of where and to some extent, what kinds of changes happen in the informal settlements. Through the use of current and historical satellite images and maps, the changes are visually represented. Different aspects of these changes can be seen on different scales, so visual analysis is done on a city-wide and at a scale smaller than the settlement.

The interview portion of the analysis focuses on questions about the informal settlement morphology and attempts to weave together the physical location and causative factors into a cohesive relationship. The narratives and opinions of the interviewees provide explanations for the visual changes happening over time. Speaking with researchers and workers who have been investigating the informal settlements for many years provides insights that are specific to Nairobi and unavailable in texts.

Nairobi is chosen as a case study for several reasons. Due to its longstanding position as the most influential East African city, many nonprofits, nongovernmental organizations, and researchers are located in Nairobi. Additionally, there are a few very strong academic institutions that are known for their research capacity. This creates an environment where there are constant synergies and exchanges between academia, government, nonprofits, community activists and individuals. Some research and data are readily available, evident in the significant body of research, reports, and actual projects undertaken in and about Nairobi over a considerable period of time. Information from pre-colonial institutions, not easily found or that do not exist in the public realm can be bridged from data collected, analyzed, and presented by nonprofits and NGOs. Lastly, Nairobi has some of the largest and most diverse informal settlements and subset villages of any city in Africa.

HUMAN SUBJECT INTERACTIONS

All the individuals interviewed are either employed by universities and government agencies located in Nairobi, or residents in the Mathare informal settlement. There are four academic and professional interviews and three

interviews with informal settlement residents. The academic interviewees are three professors, two of whom are practicing planners, and one professor, who is a former government planner and a practicing architect. The professional interviewee is the chief architect of the National Housing Corporation, a subsidiary of the Ministry of Housing. The academics are interviewed based on their respective research areas.

The three residents of informal settlements are selected based on the length of their residence in Mathare. Each person was recruited with the aid of an NGO consultant and resident of Mathare named Waweru, who knows many residents and community leaders of each village, based on his living and work situation. Each resident has resided in Mathare more than 30 years, making them more likely to have knowledge of changes over time. Each person responded to a few questions based on a questionnaire focusing on spatial changes in informal settlements. The academics and practitioner were asked questions about Nairobi informal settlements, while the residents are asked specifically about Mathare. The questions sought to identify the changes, but the more probing questions sought to classify the source and cause of the recognized changes. These questions strove to determine what role specific environmental, cultural, economic/political, and legal/regulatory factors have on informal settlement morphology. The data collected were impressions, personal anecdotes, and opinions about causes of change in an informal settlement over time.

Chapter One: Nairobi's Spatial Origins and its Effect on the Contemporary City's Form

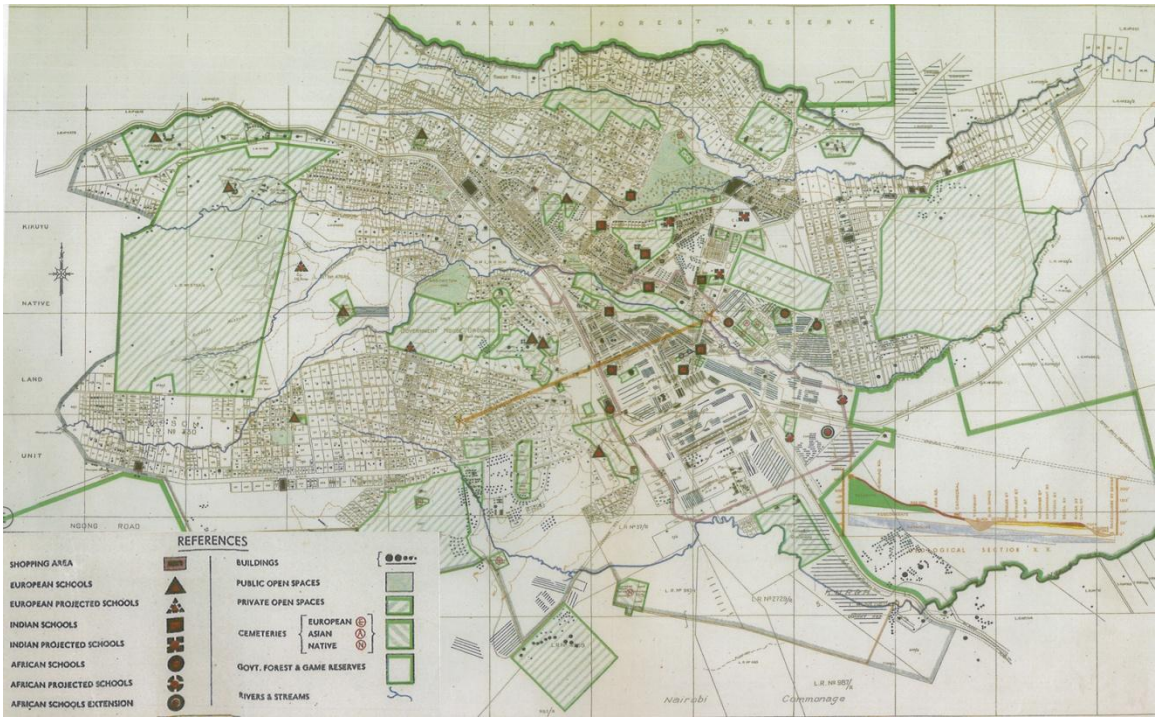


Fig. 4 Map of Open Space, Buildings and Amenities in Colonial Nairobi (In *Nairobi: Master Plan for a Colonial Capital*. By L. W. Thornton White, L. Silberman, P. R. Anderson. London: His Majesty's Stationery Office, 1948.)

LITERATURE REVIEW: NAIROBI

The urban morphology of Nairobi is essentially one of the familiar stories of colonization. The city was established to accommodate the need of the British for a railroad to traverse East Africa. The small Masaai village that was previously located in what is now Nairobi was deemed a good staging point near the turn of the century (Neuwirth 91). While the town of Nairobi and the Kenya and Uganda Railway often had competing development interests, they had to coexist to secure an industrial infrastructure for the city (White,

Silberman, and Anderson 2). The city grew in spite of its poor drainage and lack of water and become a focal point for labor and business for Kenya. This growth was always based on a multiracial and segregated (by race and class) populace. As a colonial city, other colonized people from other countries, particularly India, made a life in Nairobi. The multicultural/multiracial residents, however, did not mix as there were mandated residential zones for Europeans, Natives, and Asians. (See Fig. 5). Not only were lands designated, but so were patterns of movement; in an apartheid-like manner, workers were regulated coming into and leaving Nairobi. They were not allowed to bring their families into Nairobi while they were working on the railroad and lived in barracks with the other workers (Neuwirth 92). Those that did not have legal access to Nairobi self-built on the edge of town, which were the precursors of today's informal settlements (Neuwirth 92).

As of 1906, about a decade after the railroad came to Nairobi, the city had already started to take shape. There were seven distinct areas:

1. The Railway Centre
2. The Indian Bazaar
3. The European Business and Administration Centre
4. The Railway Quarters
5. The Dhobi (or washermen) Quarter
6. The European residential suburbs
7. The Military barracks, outside of town (White, Silberman, and Anderson 14)

At this time the population of the city of Nairobi was small, yet occupying quite a large land area. In spite of this large area, the business and administration centre was essentially a spine road. Most of the Indian community lived in a six-acre space in the Indian commercial area, while most of the Africans lived in dormitories at the railroad or in the washermen quarter (White, Silberman, and

Anderson 14). The living areas of the Indians was claimed to be unsanitary and cramped with significant drainage problems. Without analyzing the reasons for the behavior exhibited in poor living conditions, this provided an alibi for increased prejudice and segregated living conditions:

> In towns where the nationality is the same, town planning resolves itself into arranging for residential, commercial and manufacturing areas, which are further governed in character by rental and class, and in such a way as to secure convenience, good transit, pleasing amenities, and permanent healthiness for all. Something more than this is required in towns, such as those in East Africa, where the nationalities are diverse and their customs and habits different from one another. Though the same objects have to be aimed at, it has to be recognized that the standard and mode of life in the Asiatic, except in the highest class, do not consort with those of the European, and that, on the other hand, many European habits are not acceptable to Asiatics, and that the customs of the primitive African, unfamiliar with and not adapted to the new conditions of town life, will not blend in with either. In the interest of each community and of the healthiness of the locality and country, it is absolutely essential that in every town and trade centre the town planning should provide well-defined and separate quarters for European, Asiatic and African, with easy and good communication between them (White, Silberman, and Anderson 15).

However, the idea of open and explicit segregation was not fully embraced by planners. For reasons of health and well-being, it could not be argued that Europeans and Indians should be separated without exception, so laws were relaxed to allow more movement between ethnic groups. However, self-segregation, class, and suggested areas of settlement basically ensured that different ethnicities lived apart from one another.

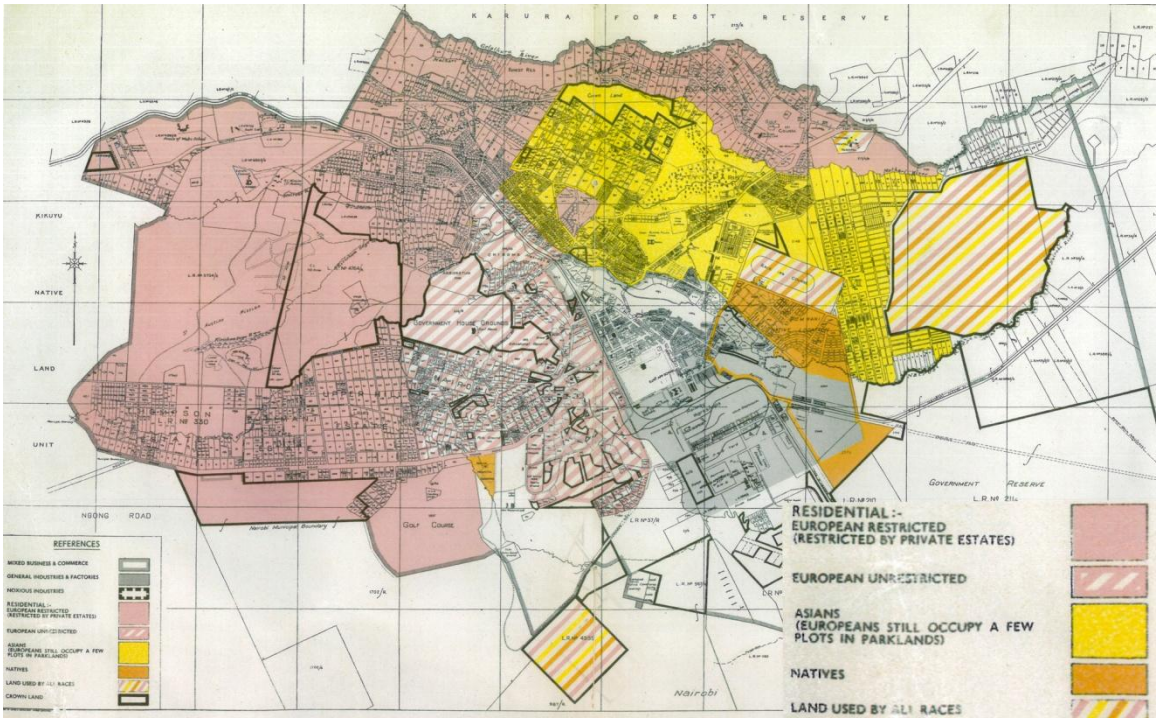


Fig. 5 Map of Population Location by Race in Colonial Nairobi (In *Nairobi: Master Plan for a Colonial Capital*. By L. W. Thornton White, L. Silberman, P. R. Anderson. London: His Majesty's Stationery Office, 1948.)

It should be noted that Africans were left out of the equation and were afforded none of the flexibility offered to other ethnic groups. Africans were assumed to need government funding for housing, which was called "sub-economic" (White, Silberman, and Anderson 18). This is an entirely colonial construct. Since most Africans in Nairobi in the first 30 years of its existence were railway workers and domestic servants, their wages were not sufficient to create financial mobility nor were the wages sufficient for workers to bring their families to live in Nairobi. By law, employers were obliged to house their employees, mostly because the realities of the labor pool required importing labor and these workers could not afford homes away from their families and

villages (White, Silberman, and Anderson 35). The dormitories that were built for workers failed because they had no privacy or space for families; once partitions were added, the dormitories became filled to capacity (White, Silberman, and Anderson 18). Municipal housing in Starehe and Kaloleni provided services and amenities that previous efforts did not and were provided expressly for railway workers (White, Silberman, and Anderson 18). These areas, to this day, are almost exclusively inhabited by Kenyans.

This “labour squatters system” (White, Silberman, and Anderson 35) is the foundation for the way in which land and tenancy work to this day. The land never belonged to the worker, as he was always considered transient and his home was back with his family in this village. Even as early as the 1920s and 1930s, this situation relied on the altruism of a responsible and just employer and African employees who did not desire self-sufficiency or a home of one’s own in the place he spent most of his time. However, neither of these conditions corresponded with reality and Kenyans began building using traditional building methods or “tin, corrugated iron, sackcloth materials” or anything he could find (White, Silberman, and Anderson 36). It remains now as it did then that Kenyans, like most people in the world, wanted the right to build a house that he owned either outright or by mortgage; however, he was dissuaded from doing so because of the expense involved (White, Silberman, and Anderson 36).

While these colonial period shantytowns marked the beginning of the large informal settlements in Nairobi, such as Kibera and Mathare, the administrative framework may shape the informal part of the city more heavily. The railway and the government fought over land issues. In 1901 the railway

took over the land it needed for operations and the rest was left under government control (Smart 17-8).

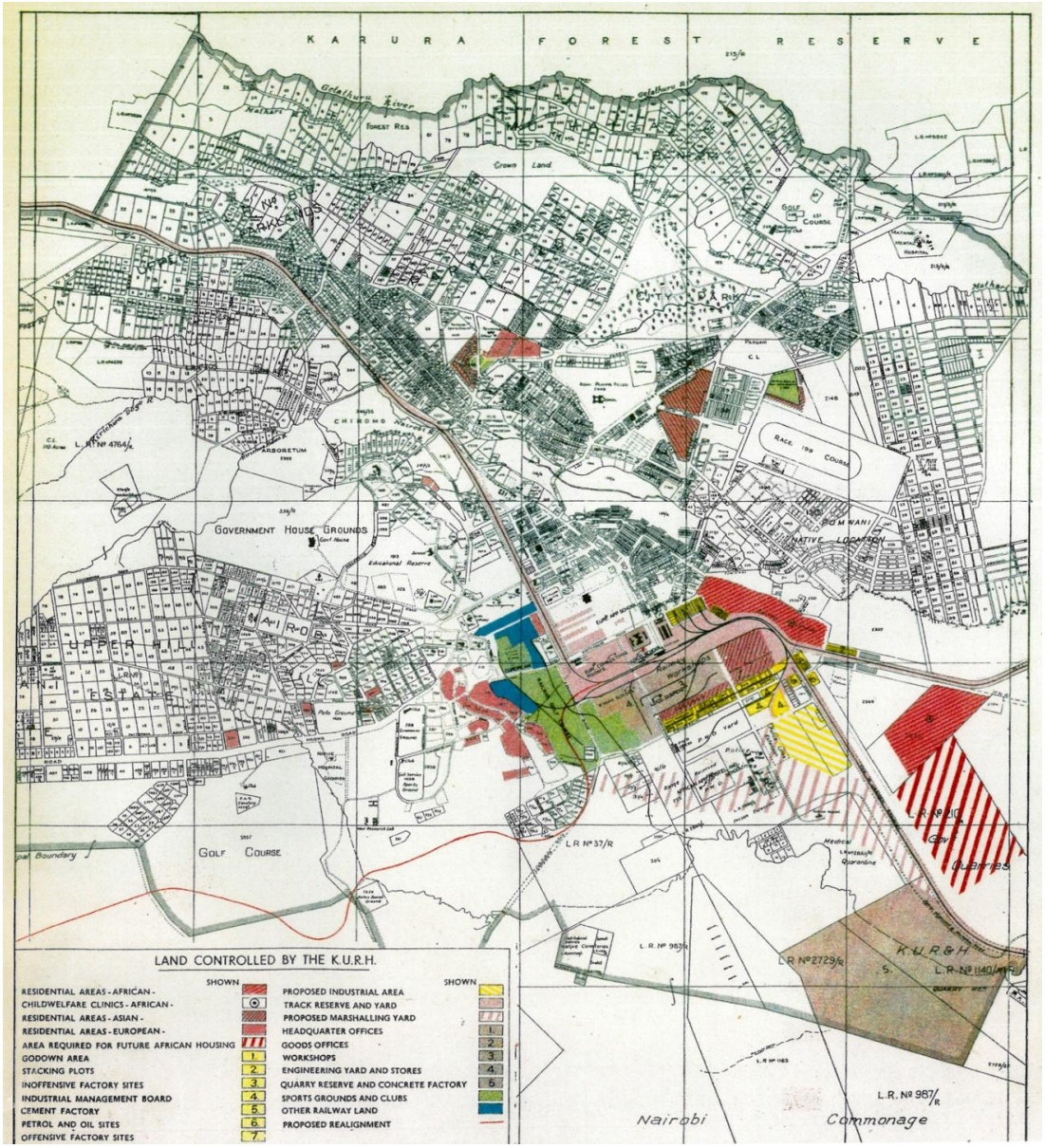


Fig. 6 Map of Land Controlled by Kenya Railway in Colonial Nairobi (In *Nairobi: Master Plan for a Colonial Capital*. By L. W. Thornton White, L. Silberman, P. R. Anderson. London: His Majesty's Stationery Office, 1948.)

The Provincial Administration, the civil service put in place by the British, was kept in place after colonial rule ended; the system treats local elders and chiefs as government employees who preside over neighborhoods (Neuwirth 93). Unfortunately, since Nairobi is both a province and a city, the city's role of administering basic services and rights is separated from something fundamental to all these services: land. Land administration is essentially the only thing the provincial government does and it is a hugely important power, one that is abused and has created a situation that developed and exacerbated the existence of a permanent underclass - the poor (Neuwirth 93).

The provincial elders and chiefs sell temporary occupation licenses for the building of structures, often temporary. It seems possible that this was originally meant to aid poor self-builders, but instead, these licenses are sold to the wealthy, who build these structures (Neuwirth 93). The rich become third world slum lords, while the chiefs and elders act as first-world management companies and receive extra money for any work done on the structures. The people who receive no benefit are the informal settlement dwellers, who are not even squatters, let alone owners of the land or the improvements on the property. Any attempts to build more permanent type of buildings are met with iron rule, keeping the poor and disadvantaged in their place (Neuwirth 93).

MATHARE

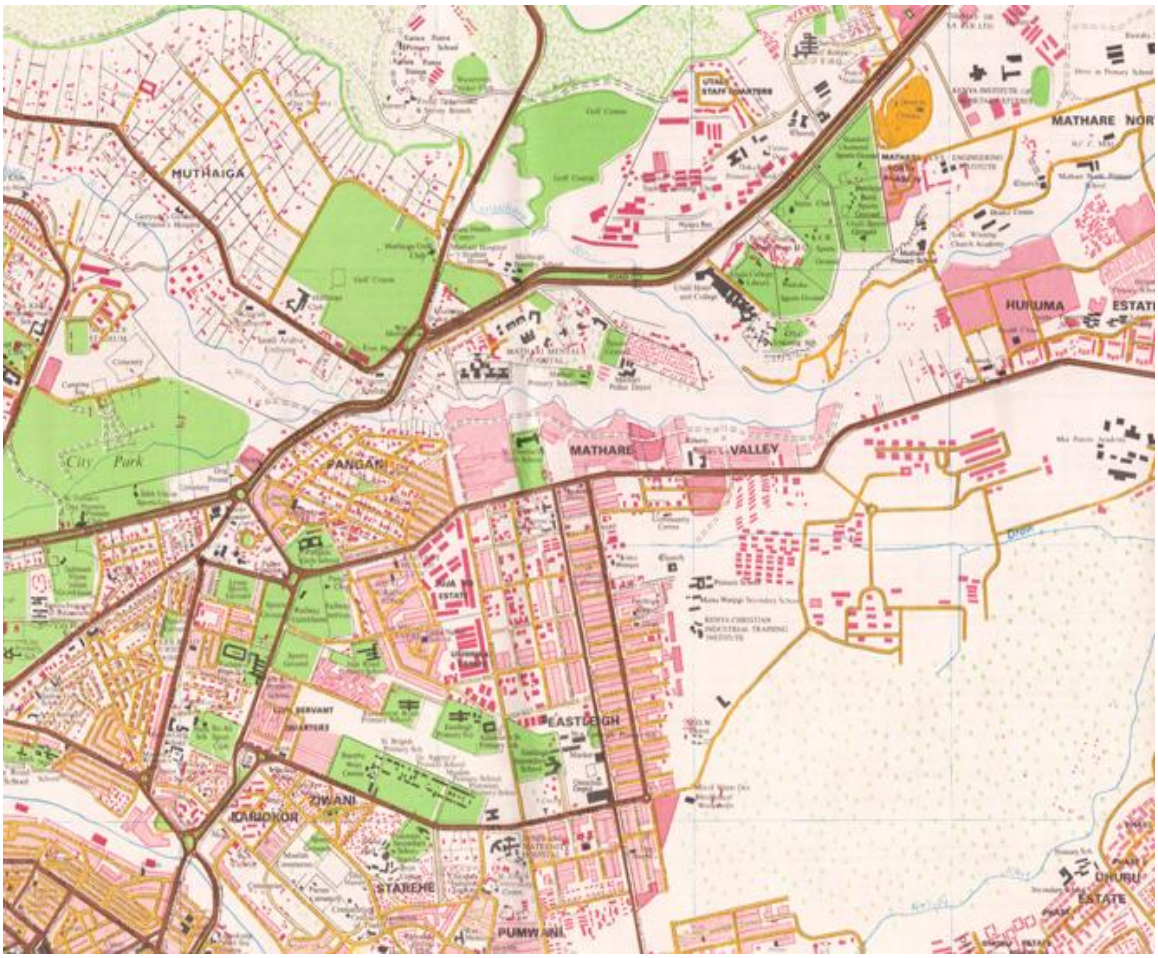


Fig. 7 Map of Modern Nairobi, 1993. Nairobi, Kenya National Archives.

Mathare is one of Nairobi's largest informal settlements; during colonial and after independence, the area grew quickly, as it was not set aside for Europeans or Asians and was close to the center city. The Mathare informal settlement, which is in the Mathare Valley, is bordered by Pangani to the west, Huruma to the east, Muthaiga to the northwest, and Eastleigh to the south (See Fig. 7). Mathari Mental Hospital and the police depot are to the immediate north of Mathare. Mathare Valley is enclosed by Pangani on the west. The

Mathare and Gitathuru Rivers run through the settlement, primarily running east and west. Mathare is five kilometers from the central business district and easily accessible to the city using Thika Road. Mathare is approximately 2 square kilometers and population estimates range from 600,000 to 900,000 residents (Dignitas 2). This is an extremely high density of people to land area, which is unsurprising since most individuals and many families live in a small, single room dwellings (Kigochie 226).

Chapter Two: Spatial Implications of Socio-Political and Cultural Factors on Nairobi's Informal Settlements

Literature Review: Urban Morphological Literature

Typologies

Since pre-colonial African cities had their own logic, the introduction of colonial forms and rules creates an amalgamation rife with confusion and complexity (Mabogunje 151). Mabogunje introduces the idea of urban colonial typologies, which fall into three categories and always have a tension (spatial, social, etc.) between indigenous and colonial people:

a. a city built by colonial administration with a large population of indigenous peoples
b. traditional city with new suburbs where expatriates live and where administrators and merchants are located
c. typical structure of a developed country city, except for the presence of large informal settlements on the fringe of the center city. The people who live in these settlements are the cheap labor force (Mabogunje 153).

These cities are located near transport, particularly ports, where imported goods from other countries can be brought in. This creates a scenario where all the economic activity in a country is based on these centrally located cities and the rural areas are no longer tied as tightly into the national economy. At best, agents from other countries would come into rural areas and take over production of a local resource, cutting out local, small producers and forcing the residents of these areas to find opportunity in cities and also to rely on goods from the city or abroad since their local economic chains had been

broken (Mabogunje 154). Inside the cities, the local artisan and technological worker classes were no longer needed as the goods they were producing were replaced by imported goods or their customers found themselves in a worse economic position. These skilled jobs declined significantly. Additionally and perhaps more detrimentally, these new colonial economic pressures derailed the traditional economic and social structures in several ways:

1. degradation of traditional knowledge and skills around production, extraction, manufacturing, engineering, etc.
2. loss of knowledge concerning location and amount of resources
3. loss of indigenous/traditional production organization run by and owned by native people that have indigenous value systems

This economic shift, as well as the introduction of Western values and the de-valuing of the rural way of life, created the urban migration seen all over the world. Economic opportunities existed in cities (Mabogunje 154-5).

After independence was achieved in colonial countries post-World War II, import substitution was attempted, since many countries had the natural resources to produce materials they were importing from European and other foreign economies. However, something important was overlooked that greatly affected the structure of these endeavors; the design of the factories and the machines that were imported for production did not rely heavily on human labor. Labor costs vis-à-vis the use of imported mechanical production methods of goods and services were expensive thereby superimposing the need for human labor on the local economies.

As a geographer, D.J. Dwyer discusses the genesis of the urban settlement or “spontaneous settlement” based on its locational and physical

characteristics. He discusses, like Duarte does over thirty years later, the lack of study and the lack of solid data particularly in Africa (He also notes that Mabogunje, in a survey of Nigerian urbanization fails to mention informal housing as late as 1968) (Dwyer 21). While this prevents deep or comparative analyses, Dwyer does note that almost all informal settlements are located near the rich rather than a complete isolation of the poor and consequently are near to high value pieces of property and infrastructure (Dwyer 21). This can be explained by the migration of the well-off from the center city to outlying areas of the city (see Fig. 8). This assumes that individuals with more disposable income can afford to pay commuting costs to more areas where the jobs are. This exchange is made for more space because of cheaper land values and greater possibilities of isolation. The extremely poor cannot afford to live in the center city, so their living situation is not made by choice. Additionally, some of these settlements are essentially where the "help" lives to support wealthy enclaves. In cities with more recent colonial ties, which include South-east Asia and West and East Africa residual urban layouts and administrative structures remain. In such circumstances, elite neighborhoods are often still located in the center city, but are closed off from the other classes (Dwyer 22). This is a remnant of the colonial restrictions and designations of where certain ethnic groups of people could settle. An interesting, but unfortunate consequence of this juxtaposition is the hyper-densification of the older, indigenous areas that are closed in by these elite compounds.

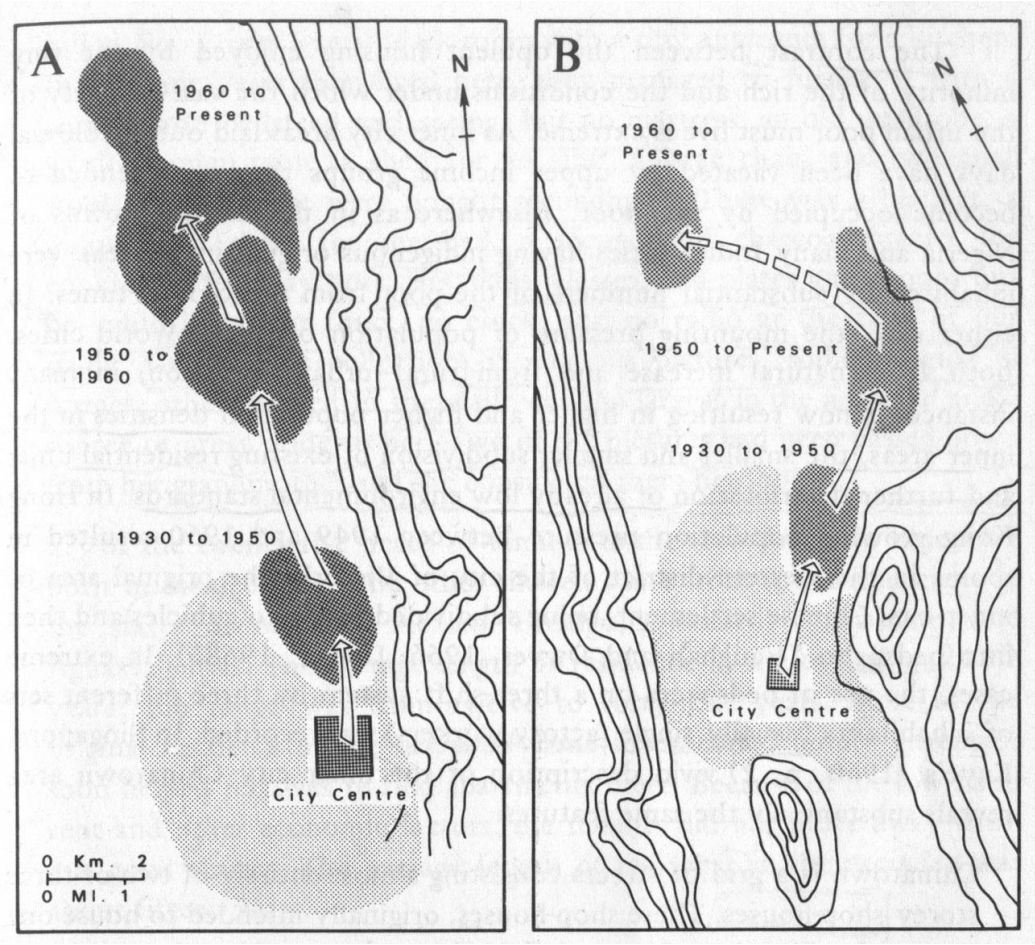


Fig. 8 Movement of Elite Residential Locations (In *People and Housing in Third World Cities: Perspectives on the Problem of Spontaneous Settlements*. By D.J. Dwyer. London ; New York: Longman, 1975, 23.

As more people move to the city and fight for housing that provides access to lower transportation costs, living spaces are being divided and divided again to accommodate ever-more people (Dwyer 24). This creates an urban fabric, where extreme density is unevenly interrupted at frequent intervals by much lower density. These patterns of informal settlement in the greater city that Dwyer describes play off the typologies developed by Mabogunje (See Figure 9). Dwyer emphasizes that while there are many pressures determining not only the location, distribution, and layout of these settlements, the most

important would be land availability (availability in both spatial and financial terms) (Dwyer 31).

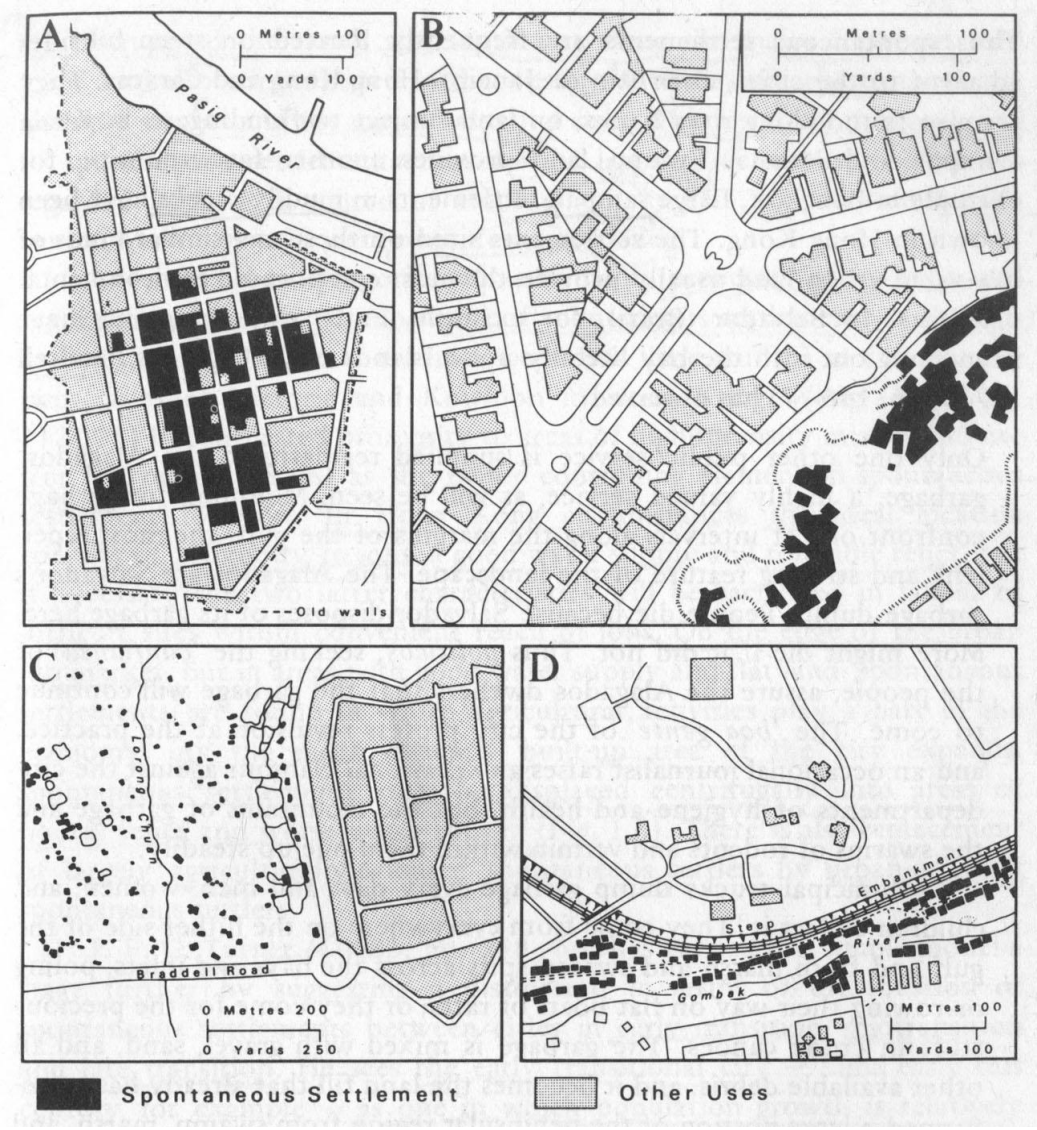


Fig. 9 Informal Settlement Locations in Various Cities (In *People and Housing in Third World Cities: Perspectives on the Problem of Spontaneous Settlements*. By D.J. Dwyer. London ; New York: Longman, 1975, 31.

Government Response to Informal Housing

While Mabogunje and Dwyer address the issue of informal settlements from a historical and economic perspective, John Turner's early writings focused heavily on the impact of legal standards and a framework of expectation regarding the construction of a dwelling and the layout and characteristics of a settlement. He makes a significant point that in order for increased user control in access to housing decisions and for the role of the government to be minimized, standards would have to be relaxed (Turner 148). He suggests that current regulations not only are unrealistic, but create conditions that may not be financially viable for municipalities and force people to operate outside of the law in order to house themselves and their families (149). Instead of exchanging lower standards for some regulatory and/or spatial control and increased service delivery, municipalities insisted that it was to be exactly how they envisioned or nothing at all. Turner makes clear that while building codes have gone a long way to advance the health and arrangement of many cities, they can have the adverse effect of limiting safe and affordable housing. If the rules do not match the realities of those they attempt to serve, the codes are not useful (Turner 150). Turner defines two scenarios where minimum housing standards are counterproductive and which are always the case where informal settlements arise:

1. A significant gap between the level of investment required and the effective demand

2. subsidies are not or cannot be provided to close the need gap due to lack of financial resources or political will (Turner 150).

These conditions lead to a formal market that cannot meet the needs of a lower class and the birth of an informal market that meets the needs of people who cannot be provided for with purely market-based solutions. This is a problem of affordable housing everywhere and it is important to understand that what is essentially black market housing and some of its structural conditions are due to policy decisions. The aim of Turner's arguments becomes more concise, while the topics he covers become comprehensive. in Housing by People, Turner discusses:

1. institutions and governments and their inability to address housing shortfalls
2. the value and meaning of housing to people from multiple perspectives
3. the economics of housing including self-help labor inputs
4. who has authority over housing in both formal and informal ways
5. the principles that must be considered to have housing for people
6. policy instruments and how they can be deployed
7. who participates in decisions regarding housing for people and how to create a strong civil society to support affordable, decent housing.

While Turner does not delve into the creation of an urban fabric, what he does do is acknowledge the holistic nature of creating shelter for people, which is an age-old process. He believes that humans should take physical and civil ownership of their homes, as it has been since modern man has existed. However, he takes care to address the modern complexities and onus of government to deliver services and maintain the public good. The reality of the creation and evolution of the modern city is that citizens and governments contribute to the urban fabric and optimizing these contributions makes for better housing opportunities.

Turner advocates the adoption of a qualitative system for judging the value of housing. (Turner 355). He argues that the quality of the physical structure is secondary to the choices people make based on necessity and lack of opportunity. Most physically “decent” housing is not located close enough to desirable jobs and schools, which creates a spatial mismatch. Turner argues that most people would sacrifice a higher quality dwelling if it meant more income or better schooling and often lower peripheral costs associated with living in areas outside of the center city or other nodal hubs (Turner 355).

A. Graham Tipple takes on the issue of informality (particularly self-help) in almost all of his writings and primarily focuses on West Africa. However, in one of his most important papers, he discusses the overall lack of urban housing throughout Sub-Saharan Africa. As discussed previously, this is in direct response to a lack of government or market-based supply at rates that many urban dwellers and rural migrants can afford. There is no incentive for private developers to provide this housing and governments lack funds and proper governance structures, in many cases, to implement housing on a scale that houses a substantial number of the urban poor. This creates a situation where those operating outside of the formal sector can build housing, either for themselves or for others. Unfortunately, this also means the loss of a revenue stream since the unauthorized construction of these “informal” structures are not taxed, do not follow regulations, do not follow areas of desired growth, and are not provided basic services (Turner 590). Tipple notes that while the housing conditions may not be worsening, they affect the positive growth and change of the city.

The supply system is failing to keep pace with the need and demand for housing. Backlogs of housing provision in the tens or hundreds of thousands are claimed for countries as diverse as Namibia, Niger and Uganda. However, the shortage is not manifest in the hordes of homeless and street-dwellers to be seen in the Indian sub-continent. Rather, there is a level of crowding, sharing, and occupying dilapidated structures which appears to be unacceptable to both national and international housing agencies.

The low income majority are largely confined to poor quality structures built in informal settlements and overcrowded dwellings where households occupy a small space or share a dwelling with others. Shortages of housing are held to be largely caused by bottlenecks in the supply of affordable land, materials, skilled workers, and other inputs to the housing system (47). Although existing poor environments affect a relatively large proportion of the urban population, they may become insignificant when set against the future shortfalls likely as population growth outstrips the current supply mechanisms by ever increasing degrees. Unless future supply can equate more closely the increasing demand, serious dysfunctions such as widespread homelessness and sleeping on the streets may become commonplace in sub-Saharan Africa (Tipple 591).

ANALYTICAL FACTORS AFFECTING INFORMAL SETTLEMENT CHANGE

Cultural Factors

Ethnic Mix

While there are often specific ethnic groups that dominate certain villages of informal settlements in Nairobi, there has not been evidence of any major, discernible differences in how these villages are built or laid out that reflect ethnic or cultural heritage. In Mathare, ethnic groups are clustered together in certain villages. Mathare is predominately Kikuyu and Luo, which largely outnumber smaller tribes, such as the Luhya, Kamba, and Kisi (Dignitas 8). The Kikuyu ethnic group has the largest share of the population and has a disproportionate share of financial and political power (Anonymous 17331A). The Luo ethnic group, primarily from Western Kenya, is the next largest group. They often have tensions with the Kikuyu. The remaining ethnic groups also have strained relations with the Kikuyu (Anonymous 17331A). This has much to do with their early political activism based largely on land grievances and their leading the Mau Mau revolution, which is often credited with encouraging the British to relinquish Kenya as a colony (Macharia 803). This situated the Kikuyu to access benefits after independence.

Based on information from the interviews, there was mention of political patronage and while there is ethnic politics in Kenya, it is unclear that the differences in benefits in specific ethnic enclaves over time are measurable. While this cannot be entirely overlooked, the defining imprint of ethnicity is based more on historical, colonial separation of groups, as previously

mentioned. The location of Mathare and Kibera was predetermined, in a sense, by the ethnic boundaries between Europeans, Asians, and Africans from colonial times and the commensurate voids and infill possibilities this spatial arrangement created.

Class

Values and goals that can be associated with class are a factor based solely on changes over time periods spanning years. There is potential value in determining if there are differing goals among the poor regarding upward mobility and spending, based on differences in income and social standing. I don't know what you are meaning to say here. This factor has a direct connection with the income and rental price factors, since expenditures based on relative importance toward goal attainment impact decision making.

Almost every individual and every family living in an informal settlement can be classified as economically poor; however, there are different levels and this may affect where and how people settle into informal settlements or whether they end up in an informal settlement at all. In fact, on the edge of many informal settlements, there are tenement structures that are mid-rise buildings and are considered a significant improvement over the informal settlement for many. However, many feel it is not worth the money even if they can afford to move, as this money can be spent on school fees or investment in a small business. For many, informal settlements are an opportunity to give a better life to their families, at the expense of decent living conditions. Currently, schools in informal settlements are provided by non-government entities at more affordable costs. This is supported by the government, as informal

settlement dwellers mobilized to obtain schooling for their children (Wildish 2-3). Class goals are very much shaped by a drive for educational attainment and availability and the desire for better employment.

Environmental Factors

Topography

Due to the difficulty or dangerousness associated with building in certain places, particularly areas on extreme inclines, these areas are either not built on or are built on by those with limited options. As is typical, natural features affect the shape of the settlement, though this does not deal directly with fundamentals of how individuals and communities organize the space of the villages. A study conducted regarding land cover changes and urban expansion over time noted that growth tended to take place in flat areas and that the trend is for growth to move toward areas with flatter terrain (Mundia and Aniya 2844). In the case of informal settlements in Nairobi, the extremely poor and perhaps more often, the “latecomers” are often forced to build in less desirable locations.

This suggests that there is a strong temporal component regarding the effects of topography on the way an informal settlement develops. Either the landlords or illegal squatters have self selected the most suitable land available for dwelling, to which the provincial administration agrees. As time passes, the settlement becomes more populated and more land area is taken up with structures. The desirability and appropriateness of the land is likely to be lesser over time, although several factors such as the inclination of the provincial

administrators, proximity to other amenities, and location to family may distort choice.

Political/Economic Factors

Employment/Income Factor

The informal sector accounts for almost 75% of Kenyan employment. Much of this employment and the ripple effects throughout the informal and formal economies occur in Nairobi. While Nairobi only accounts for less than 10% of Kenya's population, it accounts for nearly 25% of Kenyan employment and 45% if all urban employment (Urban Sector Profile 9). However, those in Mathare are left out of this market for jobs, even though they are located close to the central business district. Informed community members spoken with in Mathare suggest that just 1 out of 10 individuals living in Mathare have formal employment. The remaining Mathare residents work in the informal sector at a noticeably higher rate than Nairobi and Kenya as a whole. Not surprisingly, the percentage of people living under the poverty line is quite large and has increased from 27 percent to 50 percent from 1992 to 1997, likely due to massive urban migration (Urban Sector Profile 9). Anecdotal descriptions of this situation speak volumes to the huge support that informal workers provide to both the formal and informal economy, but also to the price paid by Mathare residents:

> Men ages 20-35 years typically work as casual day laborers in construction, small-scale manufacturing, food/vegetable kiosks, security, or as auto mechanics. The majority of women ages 25-40 work as domestic help in neighboring communities like Eastleigh and Muthaiga, or in small-scale businesses selling food, sundries, or second-hand clothes. Women and young girls also engage in transactional sex

> (earning 100kshs, the equivalent of $1.50 USD per client) and brew chang'aa (an illegal alcoholic drink) for survival. Anecdotal evidence from health, development, and education practitioners suggests that Mathare's economic insecurity is the primary factor impacting education enrolment and retention. One school leader estimated that fewer than 30% of the school's guardians/parents are able to sustain themselves in addition to paying for school costs (Dignitas 8-9).

The average gross domestic product per capita, which is approximately 60 dollars a month in 2009 (UNData), would be inadequate to live in any lower middle-class housing and still be able to afford food and transportation. It is also likely that since many people live close to or below the poverty line, which is approximately 1 dollar per day, they are in even more untenable positions to attain decent housing. Given the limited budgets and limited decent housing options, it suggests that there is a competitive and dynamic housing market within informal settlements based on income level and desired amenities.

Land Value/ Rental Prices

The origin of the informal settlements and the growth of informal settlements have a different focus regarding land value. The external property value refers to outside the informal settlement. Internal property value is the price of land within an informal settlement. Peripheral land value deals with land directly adjacent to an informal settlement.

The issue of land value is only understandable on the periphery of informal settlements since determining the value of land within informal settlements considering complex ownership and land tenure issues is quite difficult. However, it is worth nothing the value of location in order of proximity to work; Mathare is only a few kilometers from the central business district and all the land surrounding it used to be white-only settlements, which all retain a

higher value. It is also essential that improvements be considered to some degree. In the case of Mathare, the mid-rises in Huruma that are coming up to the east and a few that are being built within the informal settlement do hint toward land speculation and also toward variable rent prices in specific areas due to more expensive improvements on land. Indications of people settling nearer to higher priced property can likely be perceived by looking at historical satellite imagery. It is known that both Mathare and Kibera are located near Muthaiga and Karen, respectively, which are upscale neighborhoods.

In addition, there is also the phenomenon of the financial effects of slum upgrading and changes to informal settlements and whether this affects where people choose to live and has an effect on the price of dwellings. While this is intrinsically associated with rental prices and household income, it also deals with how people value housing and what they are willing to pay for their respective properties. In Kenya, low-cost housing tends to be a widespread cultural phenomenon. For many, location and unspent income is far more valuable than having daylight in one's home or trash and sewage-free streets. However, like the formal market, improvements do affect price and with a housing stock absent of many infrastructural upgrades, toilets, electricity, and working drains are a commodity (See Fig. 11).

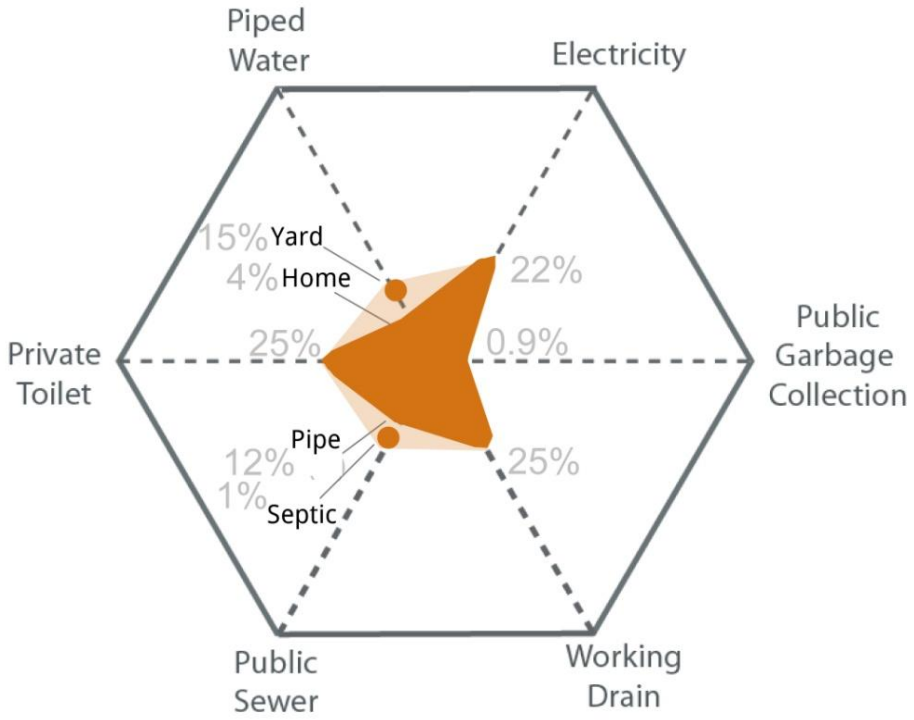


Fig. 11 Percentage of Residences in Informal Settlements in Nairobi with Infrastructure Amenities (In *Inside Informality: Poverty, Jobs, Housing, and Services in Nairobi's Slums*. By Sumila Gulyani, 15.)

While there is a cultural expectation that housing is low cost, the concept of low cost takes on a more extreme meaning in informal settlement conditions. However, from a global perspective, this means that the poorest people in a society end up spending large percentages of their income on rent. A study conducted by Sumila Gulyani based on household surveys and presented to the World Bank in 2006 shows that informal settlement dwellers in Nairobi spend more than 10 dollars or upwards of 800Ksh for one room, which is a sizeable portion of income (Gulyani 18). It also shows that the poor and the non-poor pay almost the same amount in rent despite a large income discrepancy (Gulyani 20) (See Figs. 12 and 13).

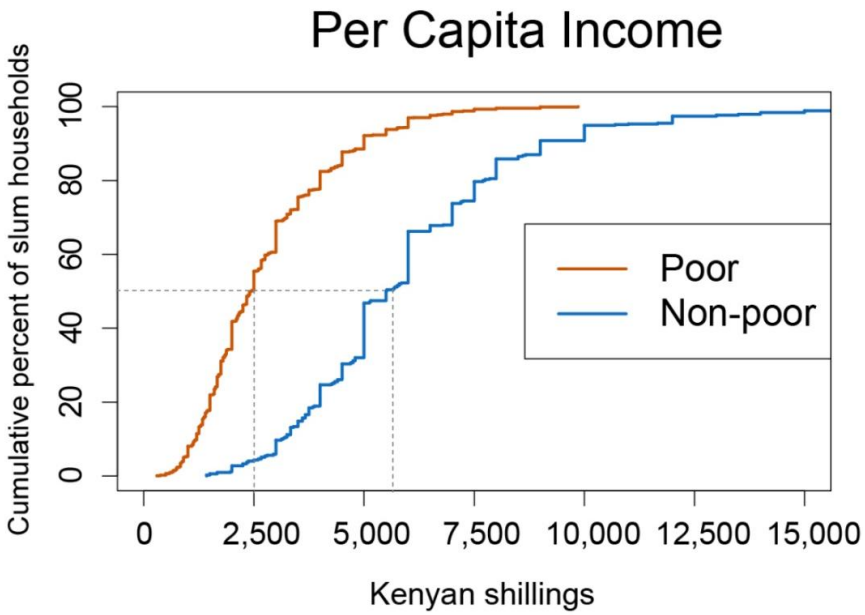


Fig. 12 Per Capita Income Based on Total Household Percentage (In *Inside Informality: Poverty, Jobs, Housing, and Services in Nairobi's Slums*. By Sumila Gulyani, 20.)

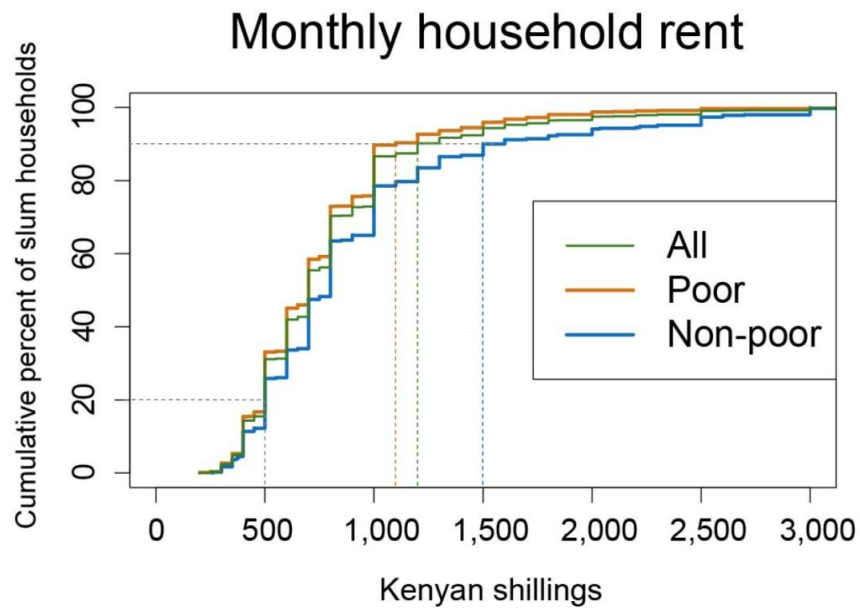


Fig. 13 Poor versus Non-Poor Money Spent on Rent in Kenyan Shillings (In *Inside Informality: Poverty, Jobs, Housing, and Services in Nairobi's Slums*. By Sumila Gulyani, 21.)

This means that the number of people interested in paying more money for housing and the existence of slum upgrading or the combination of both these factors has the ability to shift the kind and quality of the housing stock. This could also potentially isolate the distribution of better quality, higher rental housing is occurring within informal settlements.

Legal/Regulatory Factors

Building Codes

Like most building codes in colonized countries, the original codes in Kenya were adopted directly from English building codes. Naturally, the material and social conditions differed substantially from Kenya, which made the building codes ill-suited to address current issues of safety and public health.

> Nairobi and other major towns in the country have borne the brunt of this increase in humanity. Population growth and rising immigration from the rural areas, combined with increased unemployment, means that most people looking for housing and shelter in these urban centres are poor. Most end up in established informal settlement areas where they have increasingly encroached on public and private land. Today, informal settlements in Nairobi accommodate more than 70 per cent of the city's population on a meagre 6 per cent of the entire residential land area. The density in these settlements averages 750 persons per hectare, compared with 50 to 180 persons in the middle- and upper-income areas.
>
> Therefore, even if the urban poor have the time to grapple with the tangle web of building regulations, they would have little hope of getting enough land to satisfy even the minimum plot requirements. And even if they are lucky enough to acquire the land, they are unable to afford the water, sewerage and electricity connections, let alone the materials required to make three-inch thick concrete floors and nine-inch thick walls throughout.

> Various studies have revealed that, the current building by-laws, standards and planning regulations do not fully meet the construction requirements of urban poor. Although somewhat relaxed, the by-laws are still rather rigid and high so that their application has continuously accentuated the situation of affordable urban housing in Kenya.
>
> There is, indeed, a consensus that the prevailing building norms and standards are obsolete and outmoded and, therefore, irresponsive to the contemporary urban shelter needs (Agevi).

Attempts have been made to deal specifically with realities of the urban poor, as a tool to not only address realities, but potentially to influence the use of locally-based, inexpensive materials that could encourage the meeting of a minimum threshold of housing. This does not just address materials, but also addresses the planning of neighborhoods and infrastructure. In the face of no regulation, there is a total loss. After years of wrangling and failed efforts, "Code 92" was created and dealt with low-cost housing and infrastructure solutions, as well as an implementation and dissemination strategy (Agevi). The larger cities in Kenya, led by Nairobi, embrace the revised building and planning standards and some pilot projects have been undertaken. However, unless developers and landlords follow code because on the government's willingness to uphold and enforce building standards, the existence of a new building code is not meaningful. This means that the lack of enforcement of building codes has little to no effect on the spatial condition of informal settlements, though it could with better governance and support from various agencies.

Enforcement Policies

The government's role as legislator and regulator when dealing with informal settlements has been incredibly limited, if not obstructive to the development of low-cost, self-help housing. The role of the Kenyan government

as regulator often comes at the disadvantage to the informal settlement dwellers, such as the restrictions against building permanent structures where the land is owned by the government. Building in right-of-ways and service theft (water, electricity, etc.) typically are not monitored because of human resource insufficiency or unavailability. While this provides temporary economic relief to residents, it also perpetuates a culture of failed service delivery and a constantly weak social contract. Over the years, certain informal settlements have been changed greatly by government enforcement of policies; in 1953, all of the dwellings in Mathare were torn down to suppress a feared uprising (Neuwirth 92). Even now, residents are evicted, sometimes forcefully, when land rights are being contested; further, attempts to upgrade and consolidate are often met with aggressive property damage by the Provincial Administration (Neuwirth 93).

The issues of corruption, favoritism, and unevenness in enforcement are ongoing concerns for all Kenyans. Certainly, the issues regarding enforcement have the potential to affect an informal settlement, depending on the scale of the issue being enforced and the scale of the action.

Administrative Structure

Due to Nairobi's unusual situation of squatting rental tenants instead of those claiming a right to ownership, the administrative structure has a more complicated role in the spatial environment of the slums than other cities. Since there are land owners, officials (both cultural and governmental), those interacting with the tenants (who could be officials, land owners, or another person altogether), and the tenants, there are many stakeholders involved who

all have something to benefit from various spatial considerations. In situations of quasi-legal occupation of land, which is authorized occupation that does not involve proper titles and leases, “politicians (e.g. Presidential orders), party (e.g. the Kenya African National Union, KANU), and local administration (e.g. Chiefs)” (Makachia 82) all have something to gain by manipulating processes.

This local administration, the Provincial Administration, is a colonial relic that has a significant role in the continued and massive presence of informal settlements. While Nairobi is both a province and a city, most of the power regarding service delivery lies within metropolitan governmental structures (Neuwirth 93). The one important function of the provincial government is the administration of property rights. The provincial governments has the power to grant Temporary Occupation Licenses (TOLs), which allows for the temporary building of structures/dwellings on land owned by the government, where most of the informal settlements are located (Neuwirth 93). The chiefs (and elders), who are both community leaders and employees of the Provincial Administration, grant the TOLs and typically sell these to very wealthy, non-resident landowners (Neuwirth 93).

The informal settlement dwellers are often not squatters, but tenants of temporary structures owned by wealthy, absentee landlords unconcerned or unaware of their tenants’ living conditions. Since these owners are typically concerned with profit, they build with cheap materials in a market that is heavily weighted in favor of the landlord. A tacit alliance between the Provincial Administration and the landlords ensures an ongoing deterrent to the construction of better-built, permanent structures (Neuwirth 94). The only way a poor person can access TOL is through a Chief and an annual permit for

temporary-only structures, which is generally rife with corruption, graft, and extortion (Makachia 82). It should be noted that these temporary permits are generally for informal business activities, which complement the residential dwellings. Permits continue to be temporary and must be paid for on a yearly basis with no promise of renewal. Issues associated with insecure tenure and tenancy are the same in commercial and residential ventures. Additionally, commercial investments also carry a risk unassociated with residential rental transactions. This general feeling of insecurity creates an environment where commercial activity may be stabilizing economically, but spatially it increases disorderliness as owners do not carefully plan their structures or use materials conducive to a long life (Makachia 82).

Summary of Findings

What emerges from the literature review is that all the proposed factors make a difference, but all are not significant in emergence and growth over time. The environment, culture, politics and economics, and law and regulation form the framework by which impacts are measured. Ethnic mix, class, topography, employment/income, land value/rental prices, building codes, enforcement policies, and administrative structure are the specific factors used to determine impact on the urban morphology of informal settlements.

At the very least, their impact is not consistent from the period of informal settlement initiation to expansion. Ethnic mix is an example of this. The overall ethnic mix including whites and Asians had a strong influence on the emergence of informal settlements, but less influence on their expansion. Conversely, administrative structure appears to remain significant both in the

emergence and the growth of slums over time. The administrative structure, supported by a legal system led by a government reluctant to make effective changes to housing needs, deals with land dispensation and management. This system is a large part of informal settlement insecurity whose importance cannot be understated. In fact, all factors involving land remain important in development, even if the impact is dissimilar. Some factors also have more of a “point” impact than a steady, linear impact. Enforcement is not consistently an issue, as the government is often lax. However, in particular instances that are often short-lived, they have a great ability to affect spatial development in slums. It further impacts informal settlement dwellers feelings of security and their willingness to invest in dwellings and community.

IMPRESSIONS AND FINDINGS REGARDING MORPHOLOGY OF INFORMAL SETTLEMENTS IN NAIROBI

Chapter Three: Interviews with Academics

METHODS

The four interviews conducted with academics and architecture and planning practitioners were based on the interview questionnaire provided in the appendix, but were more free-flowing and driven by the interviewee. It became clear immediately that a more open format would provide a broader context for understanding and would prevent the accidental obstruction of valuable knowledge. In all the interviews, the focus of the research was introduced. This was followed by a couple of initial questions to direct the conversation. Clarifying or directed questions were asked to provide responses to any missing information that might have detracted from an overall understanding of the larger picture.

IMPRESSIONS FROM ACADEMICS AND PRACTITIONERS REGARDING FACTORS ON MORPHOLOGY

Synopsis of Conversation with Prof. Peter Ngau, University of Nairobi, School of the Built Environment, Department of Urban and Regional Planning

Ngau's comments focused heavily on Mathare, but many of his overarching ideas apply to urban morphology as it relates to informal settlements, as well as the Kenyan government's role in spatial change in Nairobi's informal settlements. His most emphatic point was that the government had a policy of neglect when dealing with informal settlements. He stated that there is an attitude of indifference to the plight of the housing needs

of the urban poor, based on an ill-informed premise that improving informal settlements might encourage more people to migrate to the city. Prof. Ngau likened this non-policy to a hospital “not giving treatment because more patients will come.”

Ngau further noted that there are two kinds of urban morphology. One is large scale and deals with the pattern and structure of land uses. The other is more local or micro scale and perhaps deals with specific neighborhoods or a section of the city and its shape, orientation and materiality. In both instances, change can only occur if it is based on factors that deviate from a “normal” evolution. The informal settlements in Thika started off just like houses in rural areas with thatched roofs and mud walls. Over time, they changed to temporary materials like cardboard and are now evolving again to more permanent materials, like concrete or more durable recycled materials. Additionally, there have been a flood of vertical and lateral additions to original structures. Many dwellings have changed elevation and added rooms, as well as modified interior finishes.

Mathare consists of 13 villages spread over a rock outcrop that was formerly a stone quarry. When the quarry was shut down, the workers stayed behind. Initially, small clusters of housing were built in more buildable areas with water accessibility, but over time, as demand increased, the area has infilled and less desirable land was used for construction. Like most informal settlements, Mathare is located near a wealthy enclave, Muthaiga to the northwest. Huruma, east of Mathare, which has grown mostly due to private development, is a lower-middle class neighborhood and has high rises

encroaching on the slums. Developers have been buying lots and building what are actually midrise buildings, sometimes seven stories high.

Prof. Ngau identified three primary reasons impacting the emergence and development of slums:

1. Physiographic factors
2. Land tenure issues
3. External interventions by non-profits, non-governmental organizations, and government

In the case of Mathare, two of these factors, land tenure/ownership and governance have played a major role in a specific, recent project in Mathare. The government owned land in Mathare and sold it to a German non-profit affiliated with the Catholic Church (specifically the Archdiocese of Nairobi) in order to do slum upgrading.

The examples of Mathare 4A and Huruma are transformations within Mathare and would not be characterized as internal transformations because the changes were not resident-driven. However, the economic factors involved are internal. Most people who live in Mathare cannot afford to live in the mid-rise tenements, so they subdivide or add stories onto their dwellings. However, in other parts of Mathare, such as 4B and 3A, government and community will have led to the opening up of circulation/the clearing of buildings to make roads wider. Almost all of the northern area of Mathare had wider road development, while retaining a similar density to the rest of Mathare. Based on the upgrading in the north and the mid-ride tenements in the east, rents tend to be higher in those areas. In the northwest, density is higher than other areas of

Mathare (2-3 story structures) and there is the presence of more permanent building materials. This is not driven by developers.

The process of upgrading the 4A village in Mathare was fraught with complexity and missteps, but is also one of few actualized upgrading projects (See Fig. 14). Initially, the land where 4A sits belonged to the government. They sold the land to the Catholic Church in Nairobi, which was backing a German non-profit. The owners of the improvements on the government land were told to relinquish their property for an agreed upon price, while those living in the dwellings were going to live in the upgraded buildings. Each person who agreed to this arrangement was placed on a list. As houses were built, people were assigned to houses following the list order. The arrangement worked much like a mortgage spread over 10 years. The residents were required to pay rent to the nonprofit for 10 years, which was used to pay back a portion of the initial investment. After 10 years, the tenant would become the owner. On the part of the nonprofit, these repayments were to be used to fund future construction projects in Village 4A. However, this process was derailed because the original land owners felt they received a bad deal and that they had been dispossessed. Additionally, the tenants felt they should not be paying rent at all, as the land was originally publically owned. Currently, no one is paying rent to the nonprofit and they are unable to move forward with further upgrading plans.

Fig. 14 Street View of Mathare 4A (Photograph by Author, 2012.)

Supporting Research

Mathare 4A is a collaborative project between the Government of Kenya, the Federal Republic of Germany, and the Catholic Archdiocese of Nairobi, which created the Amani Housing Trust to implement the program (Kigochie 226). It was supposed to consist of 8000 units for 23,000 residents on 18 hectares by 2001 (Kigochie 226). However, legal contestation of land effectively derailed the project. The following outlines the actors involved in the upgrading of Mathare 4A:

- the Federal Republic of Germany provides financial assistance
- the Kenyan government has relaxed building codes and standards
- the Ministry of Public Works and Housing has approved the infrastructure and architecture
- ApproTEC innovated low-cost bricks and tiles for construction
- Gitec consultants and Birdi Civil Engineers provide their services to ensure the new units meet the legal standards
- Amani Housing Trust acts as liaison between the residents and other actors in the shelter sector
- the residents pay rent and provide low-cost labor to construct the new structures (Kogochie 226).

In order to get a project of this scale underway, it required another country to provide funding, the Kenyan government to overlook its clumsy building code, and a non-profit to do the community building and administration. Therefore, it is unsurprising that very few projects of this kind have been attempted given the potential for bureaucratic snafus and inherent power struggles.

Synopsis of Conversation with Peter Makachia, Head of Department of Architecture and Environmental Design at the Kenya Polytechnic University College

Peter Makachia, an architect and academic, has studied urban morphology in Nairobi with an emphasis on individual housing interventions for many years. While his work focuses on architecturally scaled morphology, many of the same factors that determined why, when, and how an individual modifies a home informs why informal settlements change. The primary reason Makachia identified was land tenure. Land tenure contributes directly to the

transitory nature of many informal settlements and ultimately, this state is based on poverty. Land tenure issues can only be worked out if the principal actors have a vested interest in the success of such a rigorous process; however, but as long as extreme poverty exists, informal settlements will exist.

While Makachia believes poverty is the beginning and end of the existence of informal settlements, there is also an understanding that their state of being is affected by interventions, policy, and political will. He noted, as everyone else has, that the government had primarily taken a hands-off approach. Civil society has attempted to fill the void that the government has left and community-based organizations form pressure groups to cause government action. Most of the innovation and ideas that bring organization and security of tenure, like land trusts, are brought to the fore by non-government entities. However, aside from small victories by communities with the legal aid of non-profits, little has been gained regarding security of tenure.

Supporting Research

The United Nations High Commissioner for Human Rights has defined the right to adequate housing as a fundamental right to which the world's citizens are entitled (OCHCR). The components of an adequate right to housing are as follows:

1. Legal security of tenure

> Everyone is entitled to a certain degree of security which guarantees legal protection against forced eviction, harassment and other threats. Governments must take immediate steps to ensure the legal security of tenure for families who do not enjoy such protection. These measures must be genuine consultation with affected persons and groups concerned.

2. Availability of services, materials and infrastructure

All holders of the right to adequate housing should have sustainable access to natural and common resources: clean water, energy for cooking, heating and lighting, sanitation and washing facilities, means food preservation, a system of waste disposal and drainage and emergency services.

3. Ability to pay

4. Habitability

5. Ease of access

6. Location

7. Respect for the cultural (OCHCR).

The most important elements are security of tenure and availability of services, which are not often available in informal settlements in most of Africa. In Nairobi, most residents have no reasonable claim to land or the improvements on that land, as they are renters. It is argued as a basis of fact that secure tenure is necessary and Makachia argues that land tenure, regardless of the tenure system, does not have a primary, direct effect on the physical environments of Nairobi's informal settlements (Makachia 77). He notes that whether public, private, legal, quasi-legal and other sub-classifications regarding the nature of the tenure situation, all areas classified as informal settlements were informal in terms of "settlement development, circulation arteries, and services provision" and trended toward "the same slum physical formations of depravity (Makachia 98)." Ultimately, tenure does not create better living conditions as long as extreme poverty is present.

On the level of planning, Makachia notes the density and encroachment of public or common spaces in settlements. He attributes the informality to the

squatting on public and private land alike (Makachia 98-9). However, in some cases where informality is present, he noted that there were exceptions, but based on tenancy, not tenure (Makachia 99). In an informal settlement approximately 12 kilometers from Nairobi's CBD, there were different housing typologies and levels of organization based on tenancy; renters were in one or two room units, while owner units were larger and book-ended them or were detached (Makachia 92). There was shared open space for water service, laundry, and meetings, which differs from the pervasive encroachment in most other settlements (Makachia 99). In a couple of the villages, he noted that there was order enforced through cultural building and planning typologies (Makachia 99). Makachia's conclusion is that culture and tenancy had a much bigger role than tenure in the spatial patterns of informal settlement dwellers. His conclusion advocates that enhanced tenancy rights would likely improve the quality of the environment. He further added that owners, either as occupants or landlords, would have greater access to market finance instruments due to the stability that increased security would offer (Makachia 99).

Paul Syagga, a professor at the University of Nairobi, takes a differing view from Makachia regarding the importance of tenure in the spatial manifestations of informal settlements. He believes that land tenure is the foundation to successfully upgrading informal settlements and for more successful settlements that will come to exist. This is the conventional wisdom. However, he does believe that titling should be one of several ways to extend secure tenure to informal settlement dwellers, not the sole solution. While he points to OHCHR and UN-Habitat's ideas on a person's right to housing and the conventional belief that security of tenure are integral to successful upgrading

of informal settlements, he also notes that it is in fact a system where entities of government and communities work to use the inherent value of land to enhance a place.

> A good property system is not about “mere paper”, but one that facilitates release of capital that is latent in the assets to enhance productivity and it should aim to alleviate social and economic conflicts. In dealing with tenure options in slum upgrading, one may therefore be faced with an ethical dilemma. Is tenure security a perception of legitimacy or legality? Legitimacy refers to tenure regularization as opposed to legality which refers to tenure legalization. It is often stated that in the absence of security of tenure, residents will be hesitant to invest in their housing as they will be concerned about demolition, displacement and relocation (Syagga 109).

Syagga also mentions community land trusts, which diffuse conflict between tenants, land owners, resident structure owners, and non-resident land owners (Syagga 109-10). There is a communal aspect to land trusts and landowners will be part of the organization that leases out land to families. The improvements would be owned by the people who live on the land and governance is shared between trust representatives and the government (Syagga 110). Syagga believes that this communal system of tenure security is actually a system of relationships that builds community and that system would be a foundation for better spatial organization.

Synopsis of Conversation with Chris Nyongesa, Chief Architect, National Housing Corporation, Ministry of Housing

Chris Nyongesa discussed the role of the government in informal settlement change. What emerged was less about actual change in informal settlements, but much more about changing economic conditions and the perspective of the government toward improving housing conditions for their

poorest citizens. He noted immediately that while affordable housing was a public good and under the purview of the public sector, the focus was on making financially viable decisions, even at the expense of delivering truly affordable units. The primary focus of social housing is not profitability. The days of providing social housing at a high financial cost are long gone, having been most prevalent in the 1960s, 1970s, and a period of the 1990s. Since the late 1990s, social housing provision has declined.

Soon after independence (1963), Nyongesa noted that there was so much goodwill built up worldwide and Kenya had a great deal of multilateral support from developed countries. This support translated to funding, some of it allocated to developing public housing. This resulted in large housing estates, which provide better living conditions in Nairobi than informal settlements. At this time, the government saw its role as both the facilitator and the provider of affordable housing because there was an attitude that housing was the first step in many toward an integrated and healthy community.

The conditions changed tremendously with policies strongly influenced by the World Bank and the International Monetary Fund. Structural adjustment focuses heavily on the government addressing core activities and leaving other activities to the private sector. Proving affordable housing is typically not considered a core function of government, so their only role in housing would be as a facilitator. Previous government appropriations were frozen resulting in a sharp tapering in the rate of affordable housing projects. Since the private sector is concerned with profit, their housing projects targeted a paying clientele and these projects did not add a lot of units to the housing stock with most projects creating less than 1000 units.

The National Housing Corporation (NHC) rarely does projects that target low income Kenyans due to pressure to sell housing units. As an agency of the government mandated to provide affordable housing, the NHC are only fulfilling a part of their mission to house, which is **"**To play a leading role in efficient provision of adequate and affordable housing and related services**"** (National Housing Corporation); while encouraging middle class ownership is valuable, providing affordable housing to those deeply disadvantaged has declined to near non-existence. At one time, the NHC used to have massive planning projects that targeted the urban underclasses. The agency established long-term mortgages, but very few people owned adequate resources (savings and raising a deposit for a mortgage) to take advantage of this program. Most Kenyans who live in cities rent as a result of their financial situation. Consequently, the NHC is unable to operate in the most significant portion of the housing market for Kenyans. From a financial perspective, rental properties are more difficult because of recovery time on investment, which makes setting up a revolving fund extremely difficult.

In an environment where the social safety net was weak, informal settlements expanded quickly and in the void of housing, individual entrepreneurs built tenements to make up for the shortage of low cost housing. A project they undertook in the 1980s in Pumwani, an informal settlement, was structured using a revolving fund and temporary housing. Residents of a prescribed area in the Pumwani informal settlement were relocated to a site and their former homes were demolished and new homes were built. Once these residents moved into their rebuilt homes, the land where they were previously would be the next site for building homes. The houses would be sold

at cost and the land would be safeguarded by the community until construction was scheduled. This plan was contingent upon timely and complete repayment by residents. The beneficiaries of this project received the units, but immediately rented to others and soon thereafter, brought a legal case against the government and stopped paying rent. The problem of getting people to appreciate the government's efforts and feeling inclined to share their benefits with the next person is myopic and detrimental. Nyongesa believes that in such situations, the law must dictate that beneficiaries live in the allocated housing. Renters should not be permitted, especially not in an unregulated manner. In addition to legal considerations, he also believes that public education and outreach, as well as community engagement and involvement are integral to efforts the government makes to provide low-cost housing.

As it stands now, the risks are considered too high for further government investment action in low cost housing provision. Not only is the financial climate not conducive, but in the face of public disaffection and lack of cooperation, projects targeting informal settlement dwellers are considered non-viable. Until the masses understand the roadmap toward a healthier society and until politicians are willing to endorse this roadmap, there will continue to be roadblocks.

There are also governance and structural impediments in identifying clear lines of authority to effective government contribution to public housing. Nyongesa believes that the National Housing Corporation should be directing Kenya Slum Upgrading Program (KENSUP), but it is currently managed by the Ministry of Housing, which is the parent ministry to the NHC (See Fig. 15). However, the fact that they are managed directly by the Ministry of housing

does not mean that they have escaped the same issues that NHC has; their major project in Kibera, which is structured similarly to the NHC project in Pumwani, is struggling. This will continue to the case as long as government lacks a clear vision and goals about its role as policy developer and implementer.

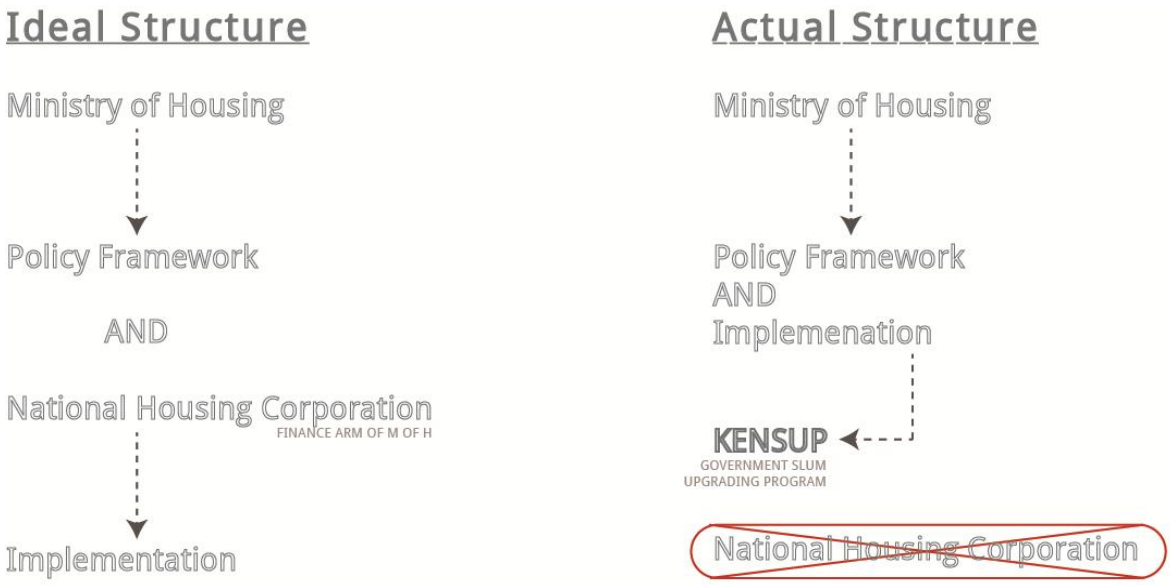


Fig. 15 Diagram of Institutional Structure for Government Slum Upgrading
(Image by Author, 2012.)

Supporting Research

The Kenyan government's role, at best, is as a collaborator, but is more often as a facilitator or non-actor. In the case of the KENSUP program, it is a collaborative effort with UN-HABITAT, other non-profits and NGOs, and several government ministries (Kenyan Ministry of Housing). The primary components of KENSUP's strategy are as follows:

- Community mobilization, organisation and participation

- Preparation of city/town development strategic and land use master plans
- Shelter improvement
- Provision of physical and social infrastructure/amenities
- Environment and solid waste management
- Employment / income generating activities
- Liaison with micro financing and credit systems
- HIV/AIDS concerns
- Conflict prevention and management
- Support to vulnerable and disadvantaged groups (Kenyan Ministry of Housing)

The conceptual plan for KENSUP involves all major cities in Kenya and uses tools such as participatory planning, comprehensive planning, and organizational development. Stakeholder analysis was planned, in particular in Kibera, the informal settlement that was chosen to serve as the location of the pilot project. Other forms of analysis, such as physical mapping and socio-economic studies, are a crucial component of preliminary, operational plans. However, operational issues such as a trust fund that needs to be operationalized and a completed project are still underway after almost 10 years.

The actual upgrading scheme taking place in Kibera involves temporarily relocating residents at a “decanting” site, where right-of-ways are set up and infrastructure is built (Kenyan Ministry of Housing). The infrastructure improvements along a main spine road include secondary roads, sidewalks, storm water drainage, street lighting, bus stops, public toilets, and business

stalls, along with a few other items (Kenyan Ministry of Housing). The construction for these items will be undertaken by an Asian government, which will likely be quite costly.

While the necessity of upgrading living conditions seems sound, most developing countries lack the resources to build affordable housing projects. There are many other issues that make abandoning or eradicating informal settlements unfeasible. However, like any large scale planning effort, slum upgrading should be strategic and well-conceived. Based on the difficulties of the Kibera project, Nyongesa suggested that this approach might present many challenges with its structure. Greg Scruggs, an employee of the American Planning Association who works on international issues, comments on the status of the upgrading program and its inability to keep momentum:

> While simple on paper, the process is excruciatingly complicated and difficult in practice. The SEC comprises 17 members representing different stakeholders in the Soweto East plan, including faith- and community-based organizations, NGOs, renters, the disabled, widows and orphans, youth, and structure owners. The latter are not going along so easily, as they stand to lose their tax-free rental income as residents move to the decanting site and are not being compensated for the loss of their structures. Ombuoghr asserts, "If you open the window of compensation for structure owners – how much? You will not have a penny even to build a bridge." In response, Marja Hoek-Smit, professor of real estate at the Wharton School of the University of Pennsylvania and a highly sought-after consultant on mortgage markets and housing reforms worldwide, calls the lack of landlord compensation a "non-starter." (Scruggs)

The process is riddled with other untenable issues aside from lacking a compensation plan like Mathare 4A: the construction demolition is often not completed and new squatters often come to live in these half-demolished dwellings; the project does not rely on the community pitching in and

contributing sweat equity to the project; lack of government buy-in; and, the lack of a thorough plan moving forward. The government's single current effort to address improvement of informal settlements has proved to be an unviable failure.

Synopsis of Conversation with Charles Karisa, Lecturer, University of Nairobi, School of the Built Environment, Department of Urban and Regional Planning

Charles Karisa, an architect who does extensive research on and work in informal settlements, is studying informal settlement typologies/classifications and what factors cause them to develop along a defining path. While looking at the production of negotiated space (streets, open spaces, riparian uses), he looks at the roles of land uses, competition for space, and how people lay claim to space. He has identified 5 components or characteristics that inform how a settlement is classified:

1. Squatter Settlements are characterized by illegal occupation of government or private land. There is often a transfer in ownership from public to private land, often held on a speculative basis.
2. Industrial Slums are located near industrial areas, but there is very little contact between industries and settlements. This means that informal settlement dwellers are not typically a source of labor.
3. Resettlement Schemes involve the government deciding to move informal settlement dwellers to another location, on the premise of a higher living standard. In most cases, the government identifies and allocates the land, but does not follow up with appropriate planning activities. Unfortunately, they are usually in low potential areas where

the land is less expensive for the government to procure. This translates directly into higher transportation expenses and commute times for the employed members of the resettled communities.

4. Unregulated, Speculative Development involves the purchases of land by private developers that is usually subdivided. It is typically developed into tenement mid-rise residential buildings or left undeveloped until financial conditions are deemed ideal. Substandard construction predominates and service provision is usually lacking. The buildings often do not meet code and are not approved from construction, in spite of their looming presence in many areas of Nairobi.
5. Jua Kali (Informal Business) Clusters locate near residential centers (not necessary informal). Jua Kali clusters function at highest capacity during the day, as they are work and vending spaces, but residential components are slowly becoming present. The benefit of these clusters is their proximity to clients and transportation.

As these types of informal settlements have emerged and changed, there have been landmark events that have had spatial and social outcomes. Karisa mentioned a few important moments dealing with the government's position regarding policy implementation in informal settlements. Karisa indicates that a 2005 Memorandum of Understanding between the United Nations and the Kenyan government, which dealt with service provision, as a landmark occasion resulting in infrastructure upgrading and formalization to enhance electricity and water supply. While the government charges significantly less for these services, it greatly reduces the stealing of services and weakening of

infrastructure from tapping into services provided to other citizens. An unexpected benefit of these infrastructural improvements was increased motivation in renters to upgrade their dwellings. The new Kenyan Constitution, in force as of 2010, changed land tenure rights enough that the number of evictions has reduced measurably.

SUMMARY OF INTERVIEW FINDINGS

Ngau's comments concentrate on a government that has an ability to largely impact the development of informal settlements, but lacks the political will and financial might to program or implement spatial activities. Their most considerable impact has been in providing land and some collaborative effort with non-profits. However, the structure and indefiniteness of land title complicates even successful projects such as Mathare 4A. He feels that the government policy has largely been one of neglect, simultaneously hoping the problem will go away and thinking that if they do too much to improve the settlements that it will encourage further growth.

Makachia focused heavily on the issue of land tenancy, not just land tenure. He believes that one does not need to own land in order to create an environment where people who invest money and sweat equity in their homes and villages. Clearly, both are issues and need to be sorted, but in the situation of informal settlements in Kenya, property ownership when most are in survival mode may not be the most immediate way to address evictions, demolitions, and hyper-mobility. He also notes that construction and planning methods in Nairobi's informal settlements differ very little based on lend tenure, but very much more based on class and in rare cases, culture.

Chris Nyongesa highlighted the failings of the government from a bureaucratic position. He believes that the environment, in political, social and economic terms, is not effective in upgrading slums. Politically, the informal settlement dwellers do not have much leverage and politicians have not made upgrading an issue on a consistent enough basis to actualize real improvement. Financially, the investment numbers are difficult to make work; upgrading or change in informal settlements would have to be viewed as human capital investment or a public good. Socially, the public who would take advantage of improvements seems uncomfortable with a social contract where they feel they are paying too much to the government and are often too short-sighted to realize the benefit to others in their communities.

Typologies emerging from various conditions were the main focus of the conversation with Charles Karisa. His typology analysis had a significant spatial component and focused a lot of the economic motives of settlement and speculation. Each of the five settlement types he identified has a strong economic reason for being. Land and economy merge most closely in industrial settlements, informal business clusters, and unregulated, speculative development.

What emerged most clearly from these conversations were land issues. Repeatedly, the issue of land tenure and tenancy came up as major elements that most affected the change in slums in the past and currently. After land, the other concern that was most mentioned was the absentee role the government has taken with informal settlements. These two things create an environment where almost all change comes from internal community forces, private developers, and non-profits.

Chapter Four: The Layperson Response to the Mathare Case Study

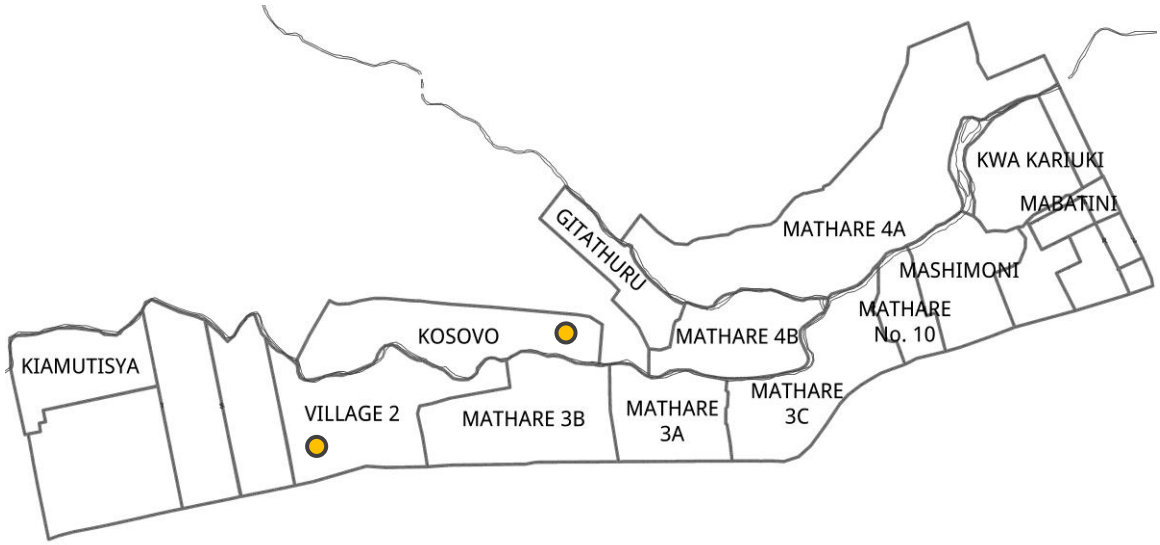


Fig. 16 Map of 13 Mathare Villages (Map by Author, 2012.)

METHODS

The interviews conducted with residents of informal settlements were based on the interview questionnaire provided in the appendix. Follow-up questions were asked as necessary, but the general structure of the interview questionnaire was followed. Interviews were conducted in various locations in Mathare (See Fig. 16), including a small restaurant and a non-profit office. Long-term residence in the informal settlement was the only prerequisite to being interviewed. In the three interviews, the focus of the research was introduced, Questions were asked in Swahili, recorded on a voice recorder, and transcribed and translated into English by Joshua Muli and Dennis Mwaniki.

IMPRESSIONS FROM RESIDENTS REGARDING FACTORS LEADING TO MORPHOLOGICAL CHANGES

Interview with Elderly Gentleman in Village Two

A 40-year resident of Mathare, the elderly gentleman had a historic perspective on many of the factors affecting the development of the villagers over time. His narrative explains the history behind the land issues and struggle for services since colonial times. This interviewee recounts the story of Mathare that began with the quarry workers. Since Mathare used to be a stone quarry, employers and workers were granted short term leases to mine and to live while working in the mines. After the leases expired, the land reverted back to the government. The government subdivided and sold the land to private developers without regard to the quarry miners, who either left or stayed on the land illegally. So, in effect, the land sold to the private developers was illegal and the squatting on that land was also illegal. Those individuals and developers who were able to purchase land were often buying illegal deeds, which makes deciphering ownership extremely difficult to-date. This is compounded by the political and governmental corruption that allows the wealthy deed holders to gain favorable treatment in land disputes. Currently, wealthy land owners make backdoor deals with the provincial administration's chiefs and build illegal structures at night in rights-of-way, flood plains, etc. that people would resist in the light of day.

The elderly gentleman outlines the house typologies that evolved as a result of the land disputes. The developers built larger, multiple story buildings to maximize tenants on a footprint. The greater evolution, though, came from those building on the land informally. They went from mud huts, to iron sheet

(the poorest built with cartons and other flimsy material), and then some people began to build with stone. However, at this time, as people began to feel more settled and secure, demolitions and evictions began, as the land was valuable and the wealthy owners wanted to capitalize on their investments. The elderly gentleman says that the residents have been advised to squat on the land until a resolution regarding the land or a grant of other, comparable land is made.

This interviewee also points out that most of the development that has happened in Mathare is either from donors (non-profits) or from internal, community organizations and leaders. Even in the case of the Kibera slum upgrading and in Mathare, non-profits work with and fund projects with the government, whose role is facilitator and provider of services planned and paid for by donors. The primary example of this is the clean water available in Mathare. Donors funded the Nairobi Water Company to build water stations and make water available to dwellers in multiple villages in Mathare. The government claims that they are unable to deliver services because the land no longer belongs to the public. In terms of internally-driven change, the slum federation, a community-based leadership organization, has agreed upon areas where people either do not build or build with the understanding that when changes need to be made that they will relocate or remove extensions.

The elderly gentleman believes that as things stand now, the main issue is land. Without security of tenure, very few people will invest in proper housing. The climate in the informal settlements has changed greatly because of donor improvements and decisions by informal settlement dwellers to put the community first. Due to the installation of electricity that provides lighting

at night and the reestablishment of wider roads, insecurity has been greatly reduced and people are allowed to conduct business during longer hours. It has even helped business development, as the land is inexpensive and close to town, so that people feel investment is safer and the chances of making profit are higher. After all, everyone is a consumer. This effort has also resulted in social benefits, as children are now able to go to school because of donors; generosity on behalf of the police, who have a base adjacent to Mathare where their families live, in the form of a property loan has also benefitted Mathare residents. There are mobile and stationary clinics that provide basic health services. The first thing that would allow people to help themselves is the knowledge they will not be evicted or have their homes bulldozed in negative outcomes from land disputes.

Interview with Middle-aged Man in Village Two

This man, a resident of Mathare for over 30 years, noted issues that are well-documented, but his responses to the questions posed in the interview provided a first-person account of the effects of a hands-off government, a strong civil society and community, and poor tenure security.

He expressed a lack of action on the part of the government as long as he had been living in Mathare. Arriving in the 1980s, he felt that there were no material changes in the informal settlement associated with the government until Kibaki came into office at the end of 2007. His impression is that more than 25 years passed before the government made any attempt to either enact or facilitate any changes in Mathare. However, he notes that the changes were actually not as a result of progressive action in the interest of the community;

rather, they made it possible for non-profits or non-governmental organizations to make changes. He notes various non-profits' attempts to provide health care, make schools accessible, and provide funds for living expenses to families and the elderly. He points out that once the government allows donors to come in, they slowly begin to provide services and increase service delivery.

He does draw several distinctions that are fundamental to understanding how land issues and politics have social and spatial effects. In Village 2, where the middle-aged gentleman lives, he notes less advancement, due to both internal and external forces. This is partially as a result of private land ownership and unclear land tenure law. He believes that if he decided to build a dwelling using more permanent materials, someone would contest his right to the land. Even if the government were to make a claim to widen a road or build a building in the public service, he believes their right to do so would be contested. The contesting of land is possible because there is not a clear legal indication of land ownership. Due to these hurdles and complications, residents and organizations are disincentivized to develop or consolidate their housing. The responses of this interviewee would seem to suggest a lack of legal redress for residents such as he.

The middle-aged gentleman also discussed the roles of the government administration and political affiliation. The government affects the lives of informal settlement dwellers through the local chiefs, the courts, and politician's patronage. In spite of the desperation and innovation involved in building anywhere available (including in rights-of-way and in flood-prone areas), permission must still be granted by a chief. This practice is tolerated by members of communities in Mathare. Once, when he found himself evicted, the

villages collectively were unable to contest the order because they were given inadequate time to file a countersuit and represent their side of their story, even though the case took 5 years to decide. When the time finally came for the villagers to move, 200 police officers came with a bulldozer and razed the entire area. Notably, the middle-aged gentleman was put in jail during the forced eviction, since he was considered to be one of the leaders of the resistance. In terms of political patronage, villages that support successfully elected politicians see more numerous and more substantive changes.

However, it should be noted that many of the changes happen outside of governmental and civil society contributions. The villagers have their own governance, which often changes the community spatially. In one instance, the people felt that the roads were too obstructed to allow for emergency vehicles and other traffic, so they agreed to make the road 10 meters wide along its entire length. Since people knowingly built in the right-of-way and felt the communal need was important, people removed whatever additions they added on to their dwellings with very little convincing. With support, the community has been able to help itself in many cases and with basic services such as light, clean water, education, and healthcare, conditions. While meager, conditions are far less desperate.

Interview with Middle-Aged Woman from Kosovo

Similar to the others interviewed, the woman living in Kosovo feels the government's stance toward informal settlements has left the capacity to affect change in the hands of non-profits and the community. She describes their role as that of facilitators; like the middle-aged gentleman, her family and neighbors

were evicted and they helped them move to Kosovo from Village 2. By virtue of the provincial administration's role as land broker, they are often the arbiters of where people settle, who is able to purchase land, and negotiating land transfers and relocations in conflict. From time to time, politicians become involved in this process. In this woman's relocation from Village 2 to Kosovo, a parliament member and President arap Moi were involved in getting land for these villagers to relocate following the eviction. She notes that aside from representatives that view Mathare as a special project, most people ignore informal settlement dwellers and even those representatives lose elections. She also notes that the government has helped the community create a strategic plan, a component of which is to provide social services.

Unlike the previously interviewed, she gives credit to the government for providing electricity, but notes that the effort was not comprehensive and that many residents receive bills for power they do not receive. Other than this effort, which would be nearly impossible for most donors to implement, she attributes most changes in Mathare to community and donor efforts. She highlighted safety concerns, such as fire and security concerns, which have been addressed to some extent. The community realized, as the housing changed from single to multiple story that timber construction was causing fires and endangering the community, so wood was outlawed in favor of other materials. In her area, which is Kosovo, the road is overcrowded with extensions to dwellings. It creates an obstruction for fire and emergency vehicles and also creates security issues due to overcrowding. Since there are more rooms, often filled with the young and unemployed, there are more new,

unknown, and desperate people in Kosovo that may feel compelled to steal to pay a relatively expensive rent and make ends meet.

SUMMARY OF FINDINGS

The responses of the three Mathare informal settlement dwellers are similar to those of the academics and practitioners. They identified land issues and government negligence as the primary factors affecting slum change over time. All of those interviewed emphatically expressed the importance of strong and effective community activism in the form of slum federations made up of residents. These community-run organizations often created rules akin to building codes and planning regulations. Even residents who temporarily breached a designated land use understood that when the time came for changes made in the public good, they must cede individual interests in an orderly manner. Non-profits and donors often help organize such organizations and are viewed as the only external assistance informal settlement dwellers can expect.

Chapter Five: Visual Assessment of the Mathare Case Study

Methods

The visual analysis of Mathare on the scale of the city, village, and the street relies on archival maps, archival and satellite aerial photography and photography from a visual survey. The physical and digital imagery were procured from the Ministry of Lands, a private company specializing in satellite imagery called Regional Center for Mapping of Resources for Development, and the Kenyan National Archives. The photographs were taken by the author over three days of visual observation in various areas of Mathare, primarily Mathare 4A, 4B, 3C, 3A, 3B, Kosovo, and Village 2. Based on information from interviews and literature reviews and the age of each visual document, assessments about the reasons for the change can be made.

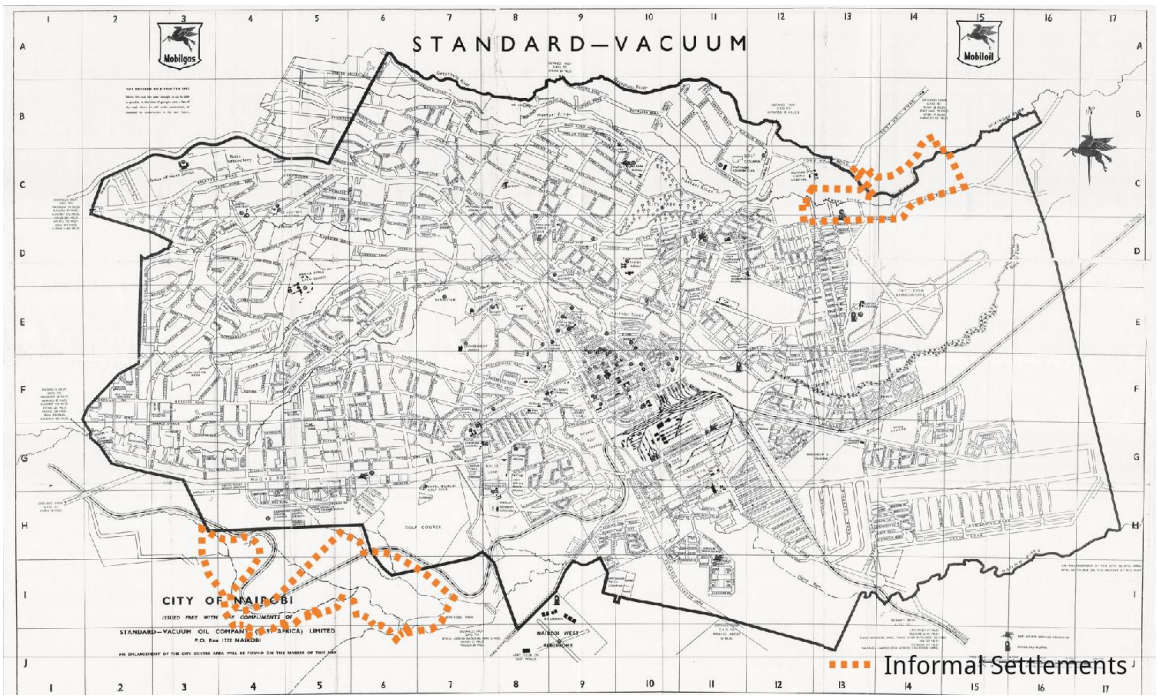


Fig. 17 Map of Colonial Nairobi, 1956. Nairobi, Kenya National Archives.

In the above map (see Fig. 17) from the mid-1950s, Kibera falls almost entirely outside the city boundary. Although Mathare falls within the city boundary, it is an edge condition with no representation on the map. Areas that would be characterized as sparsely developed in the 1940s have now been enveloped by a growing city that is both growing outward and infilling. Kibera has primarily grown southwest and southeast, since there are residential areas to the north. After the late 1970s, Kibera began to infill in many areas to nearly 100 percent of buildable area in corridors that previously had a considerable amount of available space. Mathare was also sparsely developed well into the 1960s, but has grown in a less obvious pattern than Kibera. Clusters have formed and over time and these clusters of building have grown outwards, spreading out to meet one another. Currently, much of Mathare is developed near capacity with land left open in government-controlled riparian areas and areas for roadways. This evolution from almost unpopulated and outside of the city limits to within city limits and densely populated can be seen in the time series images below (See Fig. 18).

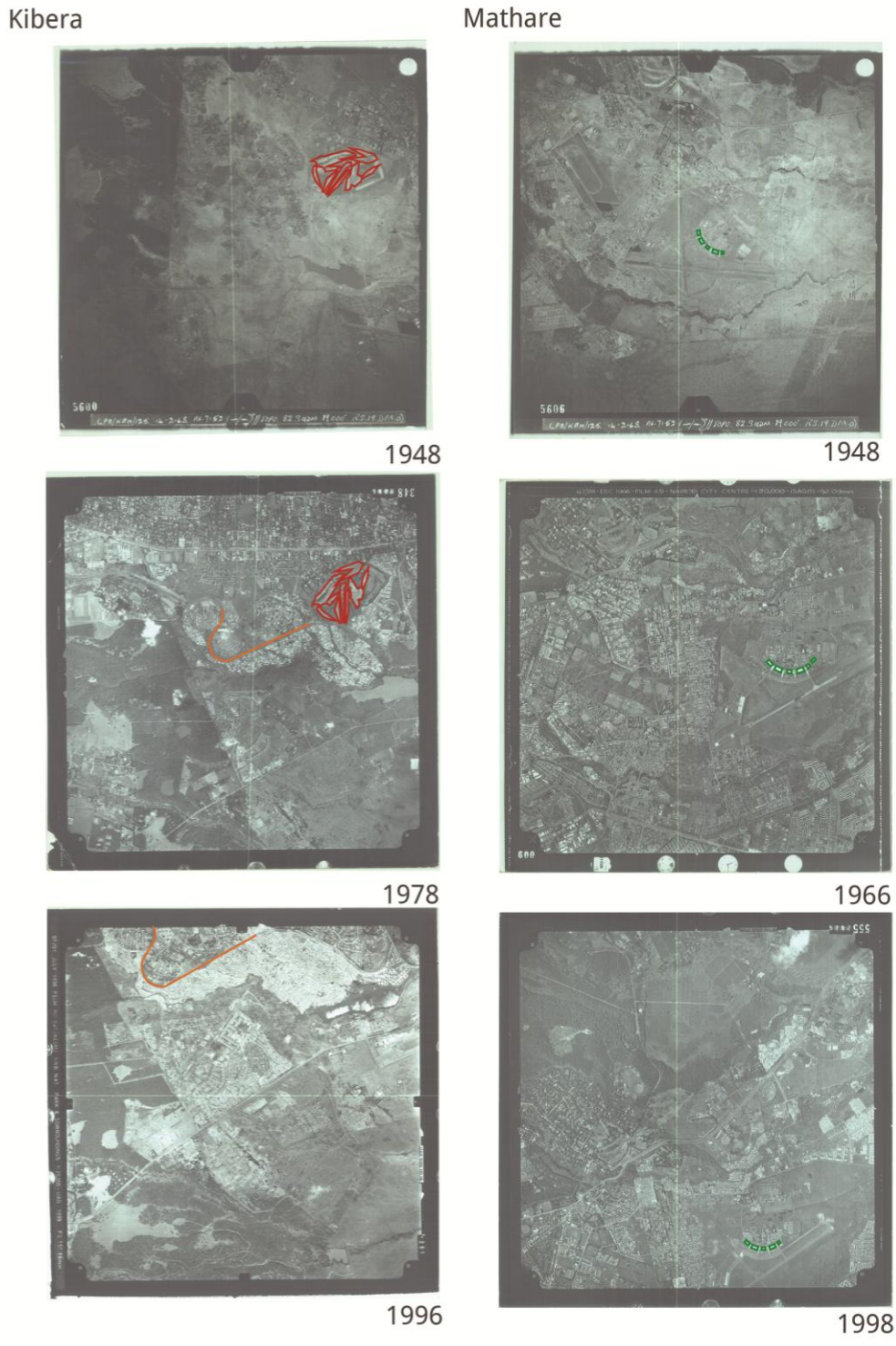


Fig. 18 Composite Aerial Photograph of Kibera and Mathare. Nairobi, Government of Kenya, Ministry of Lands.

Fig. 19 Aerial Photograph of Mathare, 1948. Nairobi, Government of Kenya, Ministry of Lands.

The population of Kenya in 1948 was almost 5.5 million people (Population Statistics). Nairobi's population was just over 115,000 people at this time, which is a two percent share of the total population (United Nations Environment Programme 148). This is far before the mass urbanization seen in Nairobi, where the city's share of the population has risen to around 8 percent.

At this time, many migrant and mine workers, almost exclusively men still lived in dormitories provided by their employers. Mathare, a portion of which is located in the upper right hand corner of the image, is still sparsely populated during this period (See Fig. 19). There is neither the economic pressure nor the population value to create conditions where squatting would be adopted by a large number of people.

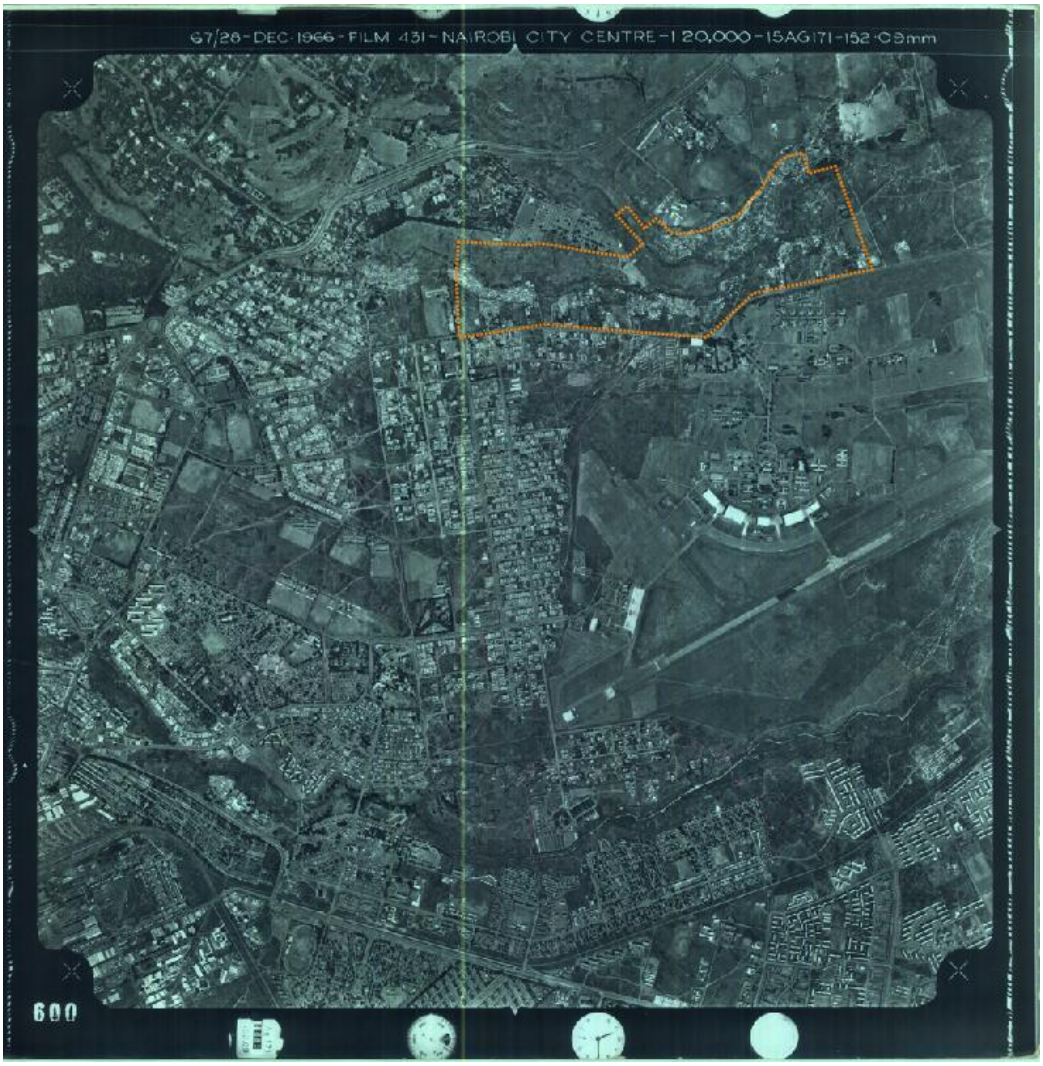


Fig. 20 Aerial Photograph of Mathare, 1966. Nairobi, Government of Kenya, Ministry of Lands.

By 1966, matters had changed dramatically. After independence in 1963, migrants in search of opportunity began to move to Nairobi. Based on the colonial land segregation designations, Africans were already settled in Eastleigh, which is close to Mathare, and became a draw to the area. Once Eastleigh filled up, people moved out to Mathare Valley and "the 50 persons per hectare density of 1962 rose to 200–300 persons per hectare by 1969 (Kigochie 226)." As more people came to Nairobi, more and more were unable to afford housing in the public or private sector, so they started to live in Mathare.

Development is not contiguous, but clustered (See Fig. 20), since individual land owners bought the land and developed as they deemed appropriate. Additionally, squatters outside of the rental system also were likely to select land near family, as well as the flattest site that was also free from unwanted water. Most importantly, when considering that most of these people have come to Mathare to better their economic condition, logic dictates they would locate closer to the urban core. Also, Muthaiga, where many of these people work, is located to the west of Mathare. This leads to a more dense development pattern in the western part of Mathare. At this time, there is no development in Huruma to the East. This is worth noting since there is such an immense amount of development in every direction on the scale of the city of Nairobi, primarily to the south and west.

By 1996, which is 30 years from the previous aerial photograph and nearly 50 years after the first, Mathare is beginning to be dense to the east and to have many dwellings north of the river. Development to the east is beginning with different housing typologies; the structures in Huruma are nearly all mid-rises and cost more than the informal settlement's shacks.

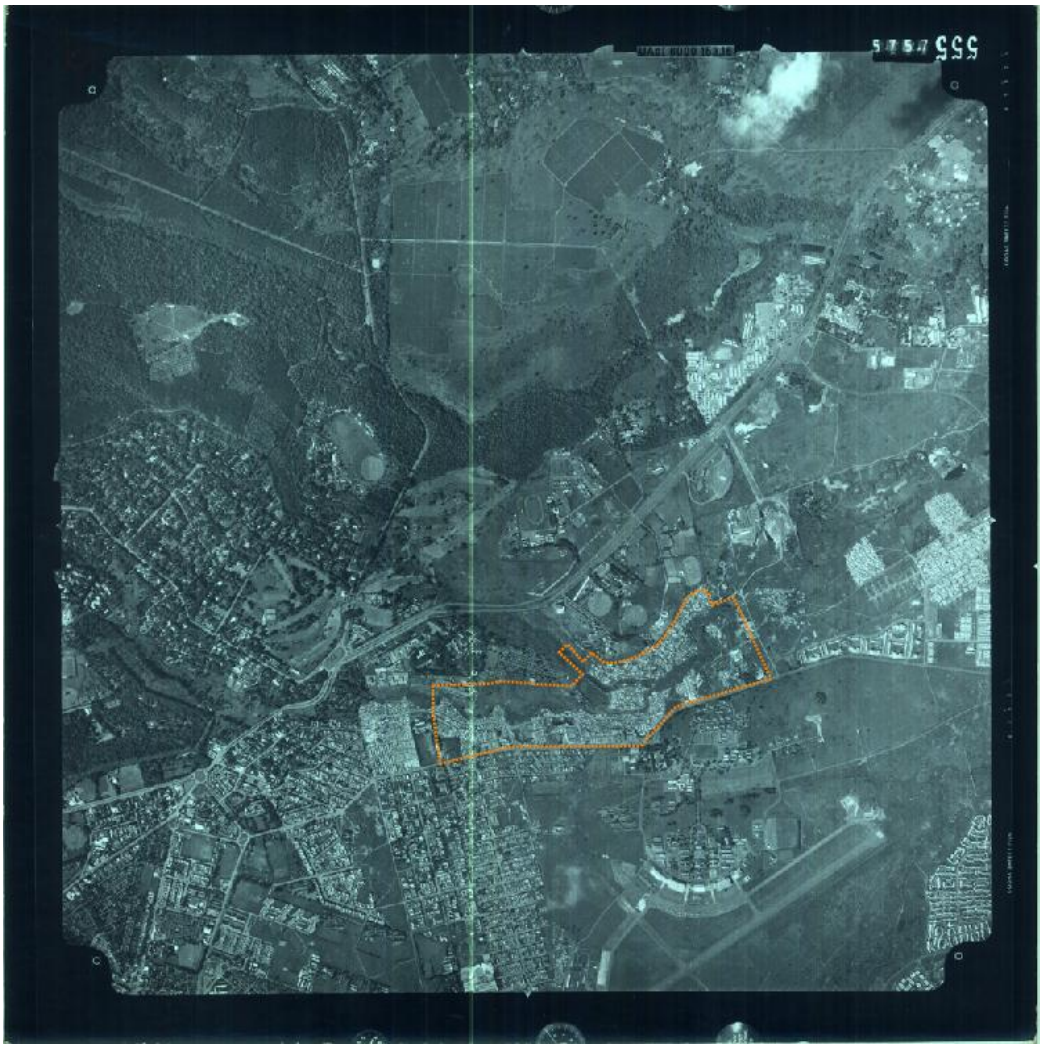


Fig. 21 Aerial Photograph of Mathare, 1996. Nairobi, Government of Kenya, Ministry of Lands.

By 2004, the explosion in development is evident in and out of Mathare (Fig. 22). By this time, nearly every open space is developed. The pattern of development in Mathare lacks the grid provided by streets or the larger texture of Huruma to the east. Based on the interviews, it is clear that the sheer volume of people and their need for a place to live has created an urgency to build. This means building in rights of way, as well as on land that earlier settlers chose not

to build on. In earlier aerial photos, where there are places left open for roads and the distance between the dwelling and the river is noticeably larger.

Fig. 22 Aerial Photograph of Mathare, 2004. Nairobi, Government of Kenya, Ministry of Lands.

In the 2010 aerial (See Fig. 23), several things have changed from 2004. When looking at Mathare 4A, there is much more open space. Roads have been left open for vehicular and pedestrian traffic, as well as for services (See Figs. 28-30).

Fig. 23 Aerial Photograph of Mathare, 2010. Nairobi, Government of Kenya, Ministry of Lands.

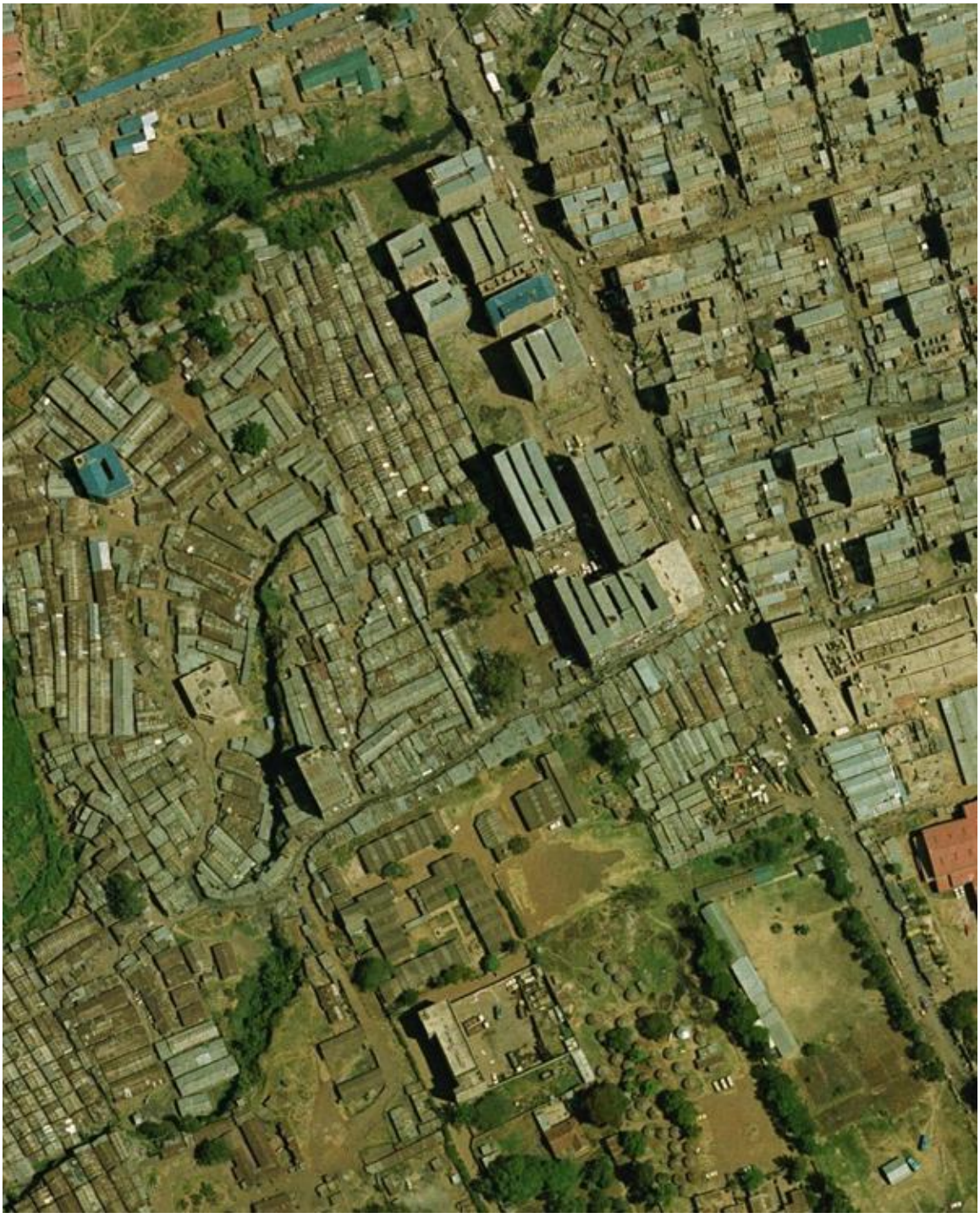


Fig. 24 Enlarged Aerial Photograph of Mathare and Huruma, 2004. Nairobi, Government of Kenya, Ministry of Lands.

Fig. 25 Enlarged Aerial Photograph of Mathare and Huruma, 2010. Nairobi, Government of Kenya, Ministry of Lands.

In the enlarged photos showing Mathare near Huruma, one can see the influence of Huruma and the spatial impact of speculative developers. Where once absentee, wealthy landlords who built temporary structures were the only land owners, now larger developers are buying land wherever they can find it, including in Mathare. Between 1998 and 2004, new mid-rise strictures have cropped up, just in the small area shown. Additionally, the area across the river, which is in the upper left hand corner of the map, shows a considerable amount of new structures. Nearly every area in the image is near capacity, except the land left open for walking and transporting goods and people.

Fig. 26 Enlarged Aerial Photograph of Mathare 4A, 2004. Nairobi, Government of Kenya, Ministry of Lands.

The areas in Mathare 4A present the starkest difference in urban texture in all of Mathare. The density is extremely low due to demolition and

reconstruction efforts, much of which has not taken place due to the disruption in the slum upgrading effort. Clear and wide roads can be seen, including a spine road that runs east to west. By 2010, almost all of that previously empty space has been infilled, although the spine road and some of the secondary roads remain clear. There is also considerable infilling taking place to the west, which had several open spaces in 2004. It should be noted that there seems to be clear areas along the river, where it appears people are not building. Perhaps residents respect the river more as a natural amenity, source of water, and formidable opponent to sound construction, although that is unclear based on this study's findings.

Fig. 27 Enlarged Aerial Photograph of Mathare 4A, 2010. Nairobi, Government of Kenya, Ministry of Lands.

Fig. 28 Street View of Mathare 4A (Photograph by Author, 2012.)

Fig. 29 Street View of Mathare 4A (Photograph by Author, 2012.)

Fig. 30 Street View of Sewer, Mathare 4A (Photograph by Author, 2012.)

SUMMARY OF FINDINGS

Most of the visual findings correspond to the information found in the literature review and in the interviews. While lack of land tenure and land insecurity is not visible, what can be seen is consistent development and overdevelopment of already established areas in various villages. There appear to be constant grabs for land by the stream of people moving to the city and also to some degree, by people who have been evicted or relocated from the land they lived on previously. Infilling to capacity and leaving little room for roads or walkways, as is described in both literature and by individuals living in Nairobi, can be seen clearly in the images.

What did challenge or differ from the interviews was the insistence that people build anywhere. It is possible that chiefs have preserved the area and people have respected the will of the chief and not built, there are many areas that have noticeable setbacks from the river edge, Additionally, there are green spaces with trees at the edge of the river that seem untouched. However, after a great deal of visual observation, there are many areas where people have built up to the very edge of the river. It is quite possible that since 2010, more risky building is taking place. There is also the possibility that certain areas along the river are less encroached upon, likely for reasons that are beyond the scope of this study.

Conclusion: What Do the Factors of Slum Emergence and Growth over Time Tell Us?

The reasons for the emergence and growth of informal settlements comprise many areas and there are nuances based on historical shifts in policies, players, and political will. Each informal settlement has its own particular story and each village within every informal settlement does as well. However, based on the cultural, environmental, political/economic, and legal/regulatory factors, clearly there are compelling factors of greater historical significance that affected the emergence of the informal settlements. These same factors came up repeatedly in the literature review and were commented upon as an element in the day-to-day lives of those interviewed. None of the indicators were completely irrelevant, but many did not merit mention of residents and researchers that were interviewed.

CULTURAL FACTORS

Ethnicity came up minimally in most discussions and was nearly absent from the literature review conducted. While there are enclaves where certain ethnic groups are more numerous, ultimately poverty trumped these differences. When looking at all the villages of Mathare, which are representative of informal settlements throughout the city, there is a glaring lack of planning strategies that considered the needs of indigenous residents and citizens. Most areas lack planning of any definite origin; instead, people build where there is space and the exceptions are rights-of-way for infrastructure. Spatially, people did not tend to fall back on their tribal planning methods. As time passed, building techniques from villages were also

abandoned in favor of cheaper and less time-consuming materials, such as sheet metal and for the acutely impoverished, even paper products and cartons. Harsh conditions and income levels became a cultural equalizer, eliminating the use of endemic building and planning techniques. Discussed briefly in Chapter Three, there are some cases where spatial organization was determined by ethnic spatial models, but the presence of a middle class was a large factor in those scenarios.

Environmental Factors

The environmental factors of topography, flooding, and pollution proved to not be a strong deterrent to building. If residents can get permission from a chief to build on a steep incline or on a flood-prone area or even in the river itself, most people would proceed. The limitations on this are not obstructing the river to the degree that it was unusable by the rest of the community, but severe encroachment is typical. This observation was confirmed by the three interviewed residents of Mathare and a tour of several villages provides visual evidence to substantiate this perspective. Considering evolution over time, the first-comers and sometimes those with more income settle on better land. As the settlements grow and boundaries expand, many settle for less desirable areas or infill into places that others may have found less manageable.

Fig. 30 Building in Riparian Area and Right-of-Way (Photograph by Author, 2012.)

POLITICAL/ECONOMIC FACTORS

Income proved to be a factor, though most people living in informal settlements are just different levels of extremely poor. In some cases identified by Makachia, villages were broken up by income level. This is true in Mathare on its edges, in areas adjacent to Huruma, which is the area to the east with mid-rise buildings. However, mid-rise buildings are popping up within Mathare, as speculative developers buy land and maximize their investments. This means that there is not always a clearly defined pattern or area where the income level is discernibly higher. It also discounts areas of upgrading that are funded by

donors and rents are kept artificially low, even if the homes and villages have greater amenities than usual at a given price point. However, this does create an opportunity for a black rental market, which is beyond the scope of this paper.

Land issues are the center of most slum emergence and growth, though income and economy was a major element in the earliest days of Nairobi's development. Land tends to be valuable in some aspects in many informal settlements since there is an assurance of an endless supply of tenants to rent and also because of many informal settlements' proximity to the city. This does sometimes create a surge in development (Huruma area adjacent to Mathare), but it also causes tenure and tenancy insecurity. However, this can be hard to identify visually.

LEGAL/REGULATORY FACTORS

Official building codes adopted by the government are essentially non-issues for informal settlement dwellers. For many years, the codes were pre-colonial and not based on conditions and materials in post-colonial Kenya. As times have changed, there has been a push to create minimal building standards in order to accommodate climatological conditions and material availability. However, these efforts lack enforcement and the government has done little to implement or support building codes. What has emerged in this study is the creation of building and planning standards by slum federations and village communities. For example, road width, rights-of-way, and material safety were discussed in each interview and it seems that individuals abide by building and infrastructure safety decisions decided by the community. This

means that the ineffectiveness of government law has led to an emergence of community law to fill this gap in some cases. However, the most important law remains self-preservation and these community decisions bend to accommodate this reality.

Without question, the primary factors that determine informal settlement growth are arcane government administrative structure involving land ownership and utilization. The provincial administration's control of the land market has created a condition where rich, absentee landowners rent to extremely poor tenants at a pure profit, and further determine the location and availability of housing in informal settlements. Since Nairobi's founding, the rich have always determined where and how people live and the complete control of the land market prevents or disincentivizes people from making substantive changes. In spite of the inability of informal settlement dwellers to break through the crushing land and housing market in informal settlements, there are ways in which people internally and with the help of donors have directed the growth patterns of informal settlements. However, something that speaks to the resilience of populations is communal law. This greatly affects the road patterns and to some extent the ways in which people expand and build. While this segment of the population is almost always disempowered, they appear to be doing their part to make improvements to their villages and community, even with such little effort from every level of government.

FUTURE RESEARCH QUESTIONS

The ultimate goal of this study is conceiving of ways that this research can be valuable in the field. The process explored in this document, particularly if

applied with intense rigor and a specific site, could be helpful toward better understanding an informal settlement and understanding how it came to be. However, it is important to recognize the value of data gleaned from literature review and further research, but to empower residents of these informal settlements by listening to people on the ground and particularly, to the residents of these areas whose familiarity with and intimate knowledge of the undocumented history provided a unique perspective and valuable insight in how their spatial environment is affected.

Finally, the questions that this kind of analysis suggests for application in the field are:

1. How are effective interventions maximized to provide improvement opportunities based on information gleaned from urban morphological studies of cities and specifically the informal settlement upon which action is prescribed?
2. How can thorough spatial analysis (in an environment where data is often lacking and incorrect) be performed?

Appendix

INTERVIEW QUESTIONNAIRE

Academics/Researchers

Can you enumerate the factors that you believe caused Kibera and Mathare to form?

Are these the same factors that have caused these two informal settlements to evolve over time?

What factors do you believe have caused the greatest changes?

In what spatial and/or physical way do you believe these factors have been expressed?

Are there any specific government policies that have had a direct impact on the way Kibera/Mathare have evolved?

Are there any specific areas within or on the edge of an informal settlement (or systems such as roads) that display these changes in a clear way?

Residents of Informal Settlements

How do you feel the government has affected the informal settlement over time?

What about in your neighborhood/village?

Have you noticed the informal settlement moving away from steep areas or areas that flood?

Can you describe the ways in which this informal settlement has changed over time?

Interview One: Elderly Gentleman from Village Two

Question: You have lived here for 40 years?
Answer: Yeah.

Question: That's a long time you have lived here. How have the government and/or NGOs been helping you?
Answer: The first president is the one who brought people here – these were workers during the colonial era. He told them to live here. They just lived, but it wasn't their land because the land was leased to foreigners and changing ownership delayed clarity, but they were just told to stay on. Then we built narrow roads for small cars to come in, but not lorries. Then the second president came and did some little development.

Question: That's President Moi?
Answer: Yeah, he tried to widen the road and provide electricity, but he also sold the land left by the colonialists to the rich people. Then the rich guys started development houses such as these ones (*referring to storied houses*). We were building mud houses, then we changed to iron sheets, but when he sold the land, stone houses came up – he did not consider us when selling the land. So then demolitions started – the land created interest among the rich because it's very near to the city. With this kind of politicking, we tried fighting back and went to the experienced people, who advised us instead of moving elsewhere and being squatters; we should just stay here and be squatters here. That's why you see us living here. It's not like we don't want to move elsewhere, but that we have been told to move out and we have refused to go until the government finds a place to move us to. The people who had been sold the land were forcefully demolishing the houses in many places. So we went to court where we were also told we were not recognized as the rightful land owners. The new constitution though seems to consider us and we are waiting for a favourable decision. But the rich people have already taken the land and built and we are still here mixed up with them. But, we can now see some development/changes because the roads are being expanded and we are getting clean water.

Question: How about the government?
Answer: No, it's donors from abroad who brought us water. They even have plans to build us sewages. Now we are drinking clean water as compared to when we moved here. So we have made that step. We also have electricity. The problem we have now is trash and drains/sewer lines for the toilets.

Question: So you have been benefitting from the government?
Answer: No, the government has not helped us. There is not a single government project. It's entirely the donors. Just individuals who volunteer to provide services to us. Like Nairobi Water Company has brought us water, not the city council or government. It's the donors who went and collaborated with the water company to bring water here following the main roads. But the government was unable to deliver the services since it sold out the land to the rich people – it was hard for them to go back and provide services to us when it had already sold the land. Even today when you tell the government to bring development they will ask you to which land to do this since the land belongs to someone else.

Question: One thing I have never understood is whether the people who bought the land have title deeds to the plots.
Answer: There are some who have and others who don't have. The land had been leased to Asians initially.

Question: That was the colonial leasing system?
Answer: Yeah, they didn't have any title deeds. They had leased for a very short time – maybe just to mine the building stones and sell them. It was like the city council was granting the land to them to just mine the stones and sell them. And the whole area was made up of stones – quarries, and hence they got short term leases. But when the land ownership reverted to the state, some people wanted to make money and as you know Kenya is corrupt. They started subdividing and selling the land to the rich. So the people who worked in the quarries were chased away. Where would you go if it were you? You'd for sure stay on.

Question: Now I understand – so the people who stayed on were the quarry workers?
Answer: Yeah, and you can see now that they have reproduced. When the Asians left, the workers/residents didn't know what to do. So they started doing small businesses. Then we were living on a temporary basis, and we still are to date. But the government subdivided the land and sold to the rich. The selling was done by the provincial commissioner administration as individuals, not the board, through the backdoor. But then the titles for the illegal deals were also processed and the president protected the rich people. We are just realizing now that here in Village 2, the land was divided into 3 plots and only two have title deeds allocated. The other plot does not have a title deed. But some people came together and started saying it's theirs, yet they only have illegal title deeds. There is no way we could have known the deeds were illegal if we didn't go to the right offices. Even when the chief (local area administrator) comes and

tells us that the land belongs to so and so and he has no letter to prove it, it is confusing because we can only trust the deed that is official.

But we have benefited most from the donors – they have enlightened us to fight for the land through the right channels. But even when we find that the deeds are illegal chasing the person away is a big problem because he/she is protected by the powerful and politicians. If you keep lobbying you will be shot or beaten. Plus our local member of parliament has collaborated with the grabbers. It's different for the donors because they are not interested in the land but providing services to the people. For now we are just living like that, unsure of the future.

Question: And you as Mathare slum dwellers and as a slum federation, what are you pushing for?
Answer: What we are pushing for is for the government to help us save what is left. The grabbers can keep what they already have taken, and then we can buy where we are living now or we get another solution. Because we have already reproduced and there are so many of us. And according to the new constitution, we should get a place to live in instead of us acting like IDPs (internally displaced persons). They should sell to us the plots we live on, so we can build nice housing. Most of us are able to build storied houses and share amongst ourselves. That would be better than fighting over the land all the time.

Question: Do you know how big each person's plot is?
Answer: We have only been building ordinary houses. Most houses here are 20x30ft.

Question: That's one room and the whole plot in extension right?
Answer: No, it's like this plot and the next one. People just subdivided informally among themselves.

Question: Tell me, after the Asians left, you guys were left behind. Was there a system by which people built or anyone built anywhere?
Answer: The area chief made sure no people came in from outside – like from the village or other settlements and built here. It was not allowed. So the initial area chiefs made sure it was only people living here then who got plots. We have upheld the same legacy up to now. But when the government sold out the plots, new people moved in from different places.

Question: And was the land bought by cooperative societies or individuals?
Answer: Both individuals and societies. Like the society which has bought part of the land is from far, a place called Kiambu. Because if the locals knew about the land sale they would have bought it because it wasn't sold for a lot of

money. The plot we are sited on belongs to some society from Kiambu, which was bought by one family, 15 people.

Question: Is there a place in Mathare where people are not allowed to build?
Answer: Yeah, since President Kibaki came to power, we do not allow people to build here. But they still build at night.

Question: You mean building the storied houses?
Answer: All kinds of houses.

Question: Even the iron sheet ones?
Answer: Yeah, because the rich go to the chief and bribe him, then go to the police and bribe them, then they build at night. There is one that has been built over there and the owner does not have a title deed – a storied house. In one month it has been completed. Now even if you go, where do you report him to? Because the chief knows, and you know the local chief administrative office is still powerful. So even if you go there, it's useless.

Question: Let me take you back a bit. You said you are the ones who had put in place the law on controlling development, you as Mathare residents?
Answer: Yeah, us as villagers. But the chief and developers agree to build – after he is bribed.

Question: And are people allowed to build in the valleys and river bank?
Answer: They are not allowed but they build illegally. The administration is the one that authorizes the construction.

Question: So things like valleys, hills and the river?
Answer: They have all been built on.

Question: For the time you have lived here, what changes have taken place here in Mathare?
Answer: There are a lot of changes because like now there are clinics being built, hospitals which were not there. Churches have come and even mobile doctors come a lot. And other services. Donors have sacrificed to help a lot. Children don't miss school anymore, the ones who want to get an education. Because donors pay for their schooling. And such stuff. But the government does not deal with anything. It's like it stopped. It has even been unable to stop illicit brewing and trade. But the donors are helpful to the willing.

Question: What changes have occurred in things like housing, roads, electricity?

Answer: They have all changed because the road has been widened. Initially no car could come in which was a problem during fire outbreaks. But now they can come in.

Question: I see. But how have you been doing the road expansion? Do you demolish the houses or what?
Answer: Yeah, we agree amongst ourselves and demolish. We always try to secure land for things that benefit everyone.

Question: And where do the people go when you demolish their houses for the expansion?
Answer: You know we all are residents here. If they are residents, we move them somewhere else because the road will be used more. The road isn't very wide; it's like 20 feet, the size of this room.

Question: Do these changes influence/impact how people live?
Answer: Yeah, it contributes because insecurity at night has decreased. Visitors have also started coming in and we respect visitors. Initially, it used to be like a jungle. Today the road is wider and people can walk around and there is less insecurity from the youth. You see like the young guys seated there, they are only dangerous at night, but what do they do now? They only sit there.

Question: And has the road attracted other people to come live here from elsewhere?
Answer: Not in terms of moving to live here, but business-wise. There are people who come from different parts of the city to collect drugs and the illegal brew here. So it has enabled people from other places to do business here during the day, but they go away at night.

Question: Other than the roads, are there any other changes that have benefited you?
Answer: I don't think there is any other business that can come here

Question: I mean other changes.
Answer: Other changes are like water – we have now started drinking clean water. We also have power along the roads which is useful at night.

Question: And how has that impacted life here?
Answer: It has helped because whether it is during the day or night, people are able to do business till around 10-11-12 at night. Even the police are not very scared now.

Question: So the police are patrolling now?

Answer: Yeah.

Question: And are these houses expensive (referring to the stone/storied houses)?
Answer: Business people are the ones who rent houses here because they know there is market for products here. Plus they don't need licenses to do business. So you can operate any business here without government interference.

Question: This is Village 2. Let me ask you the history of this road, because it wasn't here initially.
Answer: During the struggle for independence in 1952, these were farms and there was a road that came from Pangani, which was used for transporting stones from the quarries here to the CBD. And the Africans living here swore to fight to get the land from the white man – the guys working in the mines. They even killed the local chief, who was refusing them from taking the oath. The government then came and demolished everything in Mathare and arrested everyone and remanded them – they realized people here were fighting for independence – the Mau-Mau. So when the road was done by a few people, they knew this place belonged to the Mau Mau and it was named Mau Mau Road.

Question: Who dug the road, and which year?
Answer: It was done by residents by hand in/around the 1960s.

Question: But wasn't it opened just the other day?
Answer: You know in the 60s, they just made the road to transport stones from the quarries.

Question: And then people built houses on the road until it was closed?
Answer: Yeah. But it was also opened up during President Moi's time. Initially, people liked staying here hidden. Then that changed and we realized being very hidden wasn't very good. That's when we tried to widen the road.

Question: I was actually thinking the road wasn't there at all.
Answer: It was there. It's a very old road. It goes all the way to Kia-Maiko (a place in Huruma). Most of the problems here have been solved. What we have left is the land issue.

Question: You said people are not allowed to build on the road. Are there people who own plots there?
Answer: There is no one who owns a plot, but people just build.

Question: And is that construction allowed?
Answer: No, it's not but they build by force. Because if they don't, where will they live? Even when we move the ones living on the road to the river they will not accept, because it's on the river green belt.
Question: Thanks a lot. That's all
Question: Let me ask you...You have seen the colonial Mathare, Mathare of Kenyatta, Moi and Kibaki. What kind of Mathare do you expect in the future?
Answer: What we need, we already have water and all that we need is a place where we can all build and fit. The land is all that is left. We don't need the government, we don't blame the government because it's the one that has allowed donors to come in and help us with services such as water and power even for people living in carton housing. All that is left is land, so we can live like other people. We are even surprised when the government says people should pay tax on their housing and others live in carton houses, and others don't have title deeds. You can see they will have a lot of work arresting us. And we also need a brighter Mathare and for donors to show us how we can live, and the government to give out the land. The land is there. I don't know why it's not being released to us – it's taking too long because of opposition. Otherwise we have schools, none of which has been built by the government.

Question: Even the old one there?
Answer: That one there was built for the police and hospital. They invited our kids.

Question: You contributed?
Answer: Yeah we contributed to build more classes, so our kids and the police/hospital staff could learn together. The government sold the plots it owned. Even where Kosovo is used to belong to the police and they saw we were very many and decided to let us use it. It's still temporary but it's helping us.

Question: You mean the land Kosovo is on?
Answer: Yeah, people were moved here and taken there.

Question: And the land belongs to the police?
Answer: The person who saved Moi during the 1982 coup d'etat was called Mohammed. When he helped the president to stay in power, he was told to ask for whatever he wanted. First he was given plots in Eastleigh, and then he said he wanted to get a mosque in Mathare and it was granted. Then he said that we should be allowed to use the school for our children. Our struggle has just been like the one in America

Interview Two: Middle-aged Gentleman

Question: Where do you live?
Answer: Mathare.

Question: Where particularly do you stay within Mathare?
Answer: I used to live in Huruma and moved from there to Mathare Bondeni. I've lived there since...now it's since the 1990s.

Question: For how long have you lived here?
Answer: Since 1982 - Almost 30 years.

Question: For those years you have lived here, how has the government been helping you?
Answer: I don't think the government was helping until the Kibaki government when we saw some changes. During previous administrations, it's only a few donors who used to help us. Changes started with the Kibaki government around 2000.

Question: So, how has the government been helping you?
Answer: I don't see how the government has been helping us because there are complaints all the time.

Question: You mean the government has not helped you in any way?
Answer: There is no development whatsoever from the government.

Question: And you say changes have started to be visible during Kibaki's time?
Answer: Yeah, because it's during his time that we have started to see things like CDF, which has been uplifting/improving living conditions of some people. Like bursaries. Our kids are now getting bursaries and schools are adding classes to enable our kids to go to school. Those are the changes we have seen. Also, as you can see, we now have electricity, water, and bread (*read: source of income*) was also a problem – we have seen changes in those ways.

Question: So, it's not like the government has been helping, but it has enabled other institutions to help?
Answer: Yeah. Especially donors to come in. after which we started witnessing them providing different services to the citizens

Question: Services? Which ones?
Answer: If someone is sick, they treat them for free, feeding and educating orphans because here we live in poverty. That is how it started in this area. And

for the HIV positive, KENWA started to help them and that way we witnessed changes.

Question: As a resident of Village 2, how have you benefitted?
Answer: As a village 2 resident, I have not seen any changes because these are privately owned pieces of land – there are people claiming this is their land so there is no development of whatsoever kind that can be affected. So, say if I want to build a stone house there, someone comes and claims the land is theirs, so there is a problem. Even if the government was to come in and say it wants to develop it would still have problems. If it says it wants to develop a social hall, someone will come out and claim the land. That is the problem we are facing here in Mathare. The same applies to donors. CONCERN (an NGO) came here to help the poor with cash donations – Ksh 2000 every month. They have started to employ people.

Question: Who does the organization give money to?
Answer: The old ladies facing a lot of difficulties, no matter where they come from. They take their names and send ksh2000 per month to them.

Question: Doesn't the government have a similar program?
Answer: Yes, it has a similar programme for old women, say over 60-65 years.

Question: So what is this one (CONCERN Kenya) for?
Answer: Theirs is for everyone, for the poor, disabled – they take the names.

Question: And they give Ksh 2000 every month?
Answer: Yeah.

Question: When did that programme start?
Answer: Last year.

Question: No wonder I haven't heard of it.
Answer: Like in this village they are helping about 160 people – the beneficiaries from this village. But for the whole of Mathare, they took 1,500 people, but reduced the number in the process to 1,000.

Question: So the program is in the whole of Mathare?
Answer: Yes, but in this village, it has taken 160 people. And the old people, we have 260 people, over 260.

Question: So that's the government's program (*meaning the 260 people*)?
Answer: Yes.

Question: Here in Mathare, construction occurs everywhere. Is there a place/section where people are not allowed to construct at all?
Answer: Here we just construct. Even the place you construct is not your own, because you lack documents. Let's say this is my piece of land, and someone constructs here and doesn't have the documents, only the iron sheets belong to them. Even the place is stay I don't have any documents. Because the place I used to stay had many squatters and when *these* people took over the plots, they did not find alternative land for the people staying there. So they migrated here, where we are now. So now it's a struggle between the rich guys who own the land and the people living here. Say for instance I have built two rooms here, I have lived there, been born there, brought up my kids there. Now, if I tell my kids to move, where do I tell them to go, yet s/he knows that's their home? That's the main challenge we have here. So, if I come I find that the house belongs to this guy, it's not like it's his place, but he lives there. But then there is the other person who will come out and tell me to move away because this is their plot. So it becomes a struggle.

Question: How about at the river valley? Are people allowed to build there?
Answer: Yes, they are prohibited to build there, because it's not their land. We follow the administration to get the houses. You can't wake up and start constructing without seeing the area chief (*administration representative at local level*)

Question: And do the valleys/sharp slopes prohibit people from building there?
Answer: No, if you are told to build, it is your initiative to use your brains and know how to build.

Question: And do you leave any wayleave from the river?
Answer: No. Here, if you tell people to build, even in the river itself, they can put on rods/posts then build a house on top.

Question: So, for the time you have lived here, which is a long time, what changes have you witnessed?
Answer: Just like I said, I have started seeing changes during the Kibaki administration.

Question: I mean like roads, supermarkets coming up ....
Answer: In this Mathare, there have been little changes. Even here, there used to be houses where people lived.

Question: You mean like iron sheet houses?
Answer: Through a court order, we were evicted. When we were evicted we were not told we will be relocated to a certain place, they left us floating. So

when we left we realized there was some space here so we went and fixed ourselves there. So there have been no changes for the squatters. It's happened only to the rich people. Because when I move who benefits? So when they move me, I have to find somewhere to live.

Question: Can you explain to me the system that was used to evict you?
Answer: It was a case for which we went to court for 5 years and we lost in one way. When this guy (*the land owner*) filed the case, we did not (have time to) file a counter claim in the court so that the case could have two faces. So at the end of the day we were told we did not file a counter claim and we thus lost. We even appealed and were given the same story, so we did not have an alternative. So it's not like we lost, it's only that we did not have power to file a counter claim in the court, which made us lose.

Question: And when you lost, you just left?
Answer: No, we didn't just move, there were almost 200 police officers who forced us out. There was also a tractor. This guy almost died then. The demolitions were done when I was inside.

Question: In the house?
Answer: No, I had been arrested. They were saying I was the inciter, so they arrested me and locked me in so that they could demolish.

Question: And when they did the demolitions they built new houses?
Answer: Yeah, when they demolished, they found space to build a storied building.

Question: How about infrastructural changes, such as roads being opened up?
Answer: During the last election period we expanded the roads, because they were very squeezed. A car could not even get space to come to the village. But we decided that we needed roads for security and emergency purposes. So we decided that the road would be 10meters. So that's how it was – all the way from the bottom to the top.

Question: And when you demolished the houses to pave way for the road, where did the people living there go?
Answer: It's not like we told people to demolish their houses. They knew all along that this was the road space and they had made extensions to it. So what we did was tell them to move back their houses to leave the road space. So there was no fighting over it.

Question: So everyone knew that this was the road reserve?

Answer: Yes, even where I am now, I know it's on the reserve. But for the time being, I will have to live here as I plan.

Question: So the few changes that have been happening such as new housing, how have they been contributing to the lives of the people here in the slums?
Answer: The new houses have brought in new people. Because it's not people from the slums moving into them. They are new people here. Some come from Kayole, Buruburu, Kibera, etc. So, it has contributed to new people moving here.

Question: How about the road expansion?
Answer: It has helped because without roads there is no development. If anything happens there is no way we can help ourselves (like emergencies). So after capacity building there was no problems with the road expansion.

Question: So, there are no other changes other than the ones you have told me?
Answer: For now, you know everything depends on the leaders. If the leaders are from different parties, then there is little change. (*In essence, they were saying since our admin setting is political, it depends on which party the specific village supports. If for instance they supported one party and a different party rep wins the elections, then there would be fewer changes in their area because they opposed the particular leader).*

Question: I know Felix has asked a lot about development but I will ask you, you have lived in Mathare for…?
Answer: Since 1982.

Question: And for those years you have seen Mathare transform. Would you rate the changes as immense or how would you rate them?
Answer: The changes I can point to are, like, we never had the lighting masts, water which we used to fetch from way down there, and which was dirty with sewage and all. That time kids never used to go to school, but now they are without difficulties. That time you would find infants thrown in the garbage and drains and all, but now it's so hard to find such things.

Question: So you do agree that the greatest changes have been in infrastructure service provision. How about housing wise?
Answer: In terms of housing we have toilets, which we never used to have – we used flying toilets. Now they are no longer used. If you are pressed there is a place to relieve yourself, which was never there before. Today, if I have issue all I need to do is call and the chief and district officer get here fast. In the past, it was so difficult to reach these people.

Question: But in general, would you say the houses have increased?
Answer: Yes, they have become very many, more than the people. That way, I can say there has been a change, though the squatters still suffer most especially when new developers come in.

Question: I think that's all. Thank you very much.
Answer: Just like I told you, what is left we cannot blame the government, but the people themselves. It's either we are grouped together and put in a large housing development. The most important services are already in place. Like now we can't claim water since we have clean water, roads, power. What we now need is clean houses. Al the major services have been provided in Mathare, we even have plenty of schools – both public and private.

Question: I have talked to many people about this. If you were given an option to move to a big enough multi-story apartment or land was secured somewhere else near the city, would you move?
Answer: Yes we would. We would prefer for each person to be given a piece of land since even if they were to build for us here we would still be squatters.

Question: So it doesn't depend on where it is?
Answer: No, wherever is good.

Question: So you are all in agreement about that?
Answer: Yes, we even have our money and would use it to pay the government in installments. *He further went on the identify that their living in the slums has exposed them to very many ways of getting services and/or earning incomes so that would not be a problem to them. That they can survive anywhere as long as they had the comfort of tenure.*

Question: The reason for asking was because I spoke with some guys from Kibera and asked them the same question. But I was talking to younger guys. They indicated that they would not like to move to another place because that is where they have grown up and know how to fend for themselves and interact with people. I don't know whether you are aware of the Jamii Bora project in Kaputei.
Answer: Yes, it even started here. Even their headquarters were here the first time. And the donor wanted to relocate the people to Kajiado and other distant places, for which the people agreed. But when the donor was planning there was a lot of opposition from the place they were to be resettled – when the people there knew people were going to come from Mathare, Nairobi. So then it became political. So it appeared even the government wants us here, and the MPs and councilors wanted us here also for the votes. Even the distribution of aid today is very political and those in need never really benefit.

So we realized it was only the donors who were genuinely into helping us and decided to love each other as Mathare dwellers. But every passing year the government and politicians will watch us progress.

Interview Three: Middle-aged Woman

Question: (*introductions ……*) For how long have you lived here?
Answer: 40 years. I was born here.

Question: And you live here in Kosovo?
Answer: No, we just came to Kosovo. We used to live in Village 2.

Question: How long have you lived in Kosovo?
Answer: We moved here in 1999.

Question: You were part of the group that was evicted?
Answer: Yeah, they brought us to this side.

Question: So you have lived here for like 40 years. And in those years, how would you say you (as a community) have benefitted from the government and NGOs?
Answer: I cannot point out how the government has helped us, but donors have. The government helped us by moving us from the other side where land had been bought by private developers. Our parents used to live on the other side, but they never knew when the land was being bought, they were still occupying the land when developers bought it. The land was bought by societies. So they were evicted from there, where the mosque is. The then member of parliament called Andrew Ngumba Kimani took the village leaders to President Moi who gave us this piece of land. After that, people moved here. So the only way I can say the government helped us is to move us here at no fee. But the people who were put in charge of subdividing the land were not straight and did not follow the rules because we were not supposed to get two rooms each but we ended up with 2 rooms. So that's the only way I can say the government helped us. But after we got here we have not gotten any assistance. In the slums which don't have title deeds, we are one of them. The leaders who helped us get the land were removed politically and new ones placed there, and the new ones don't follow up on land issues. So we don't get much help since we are called Mathare slum dwellers.

Pamoja Trust (formerly Slum Dwellers International Kenya affiliate) was the first NGO in Mathare which formed a slum federation (Muungano). It is these two which facilitated construction of the first water project in Kosovo (*place interview is conducted*). Although there was a lot of politicking, we got the water service here. The water project is now benefitting everyone in the slums (*she further goes on to say how the donor paid the water bills – common bill for mass water supply – for one year. Meaning people only have to pay a small fee for their water etc – can't confirm this info its first time I heard that*)

The other NGO is KENWA, in which I am a Trainer of Trainers. It's an HIV/AIDS awareness NGO doing testing, counseling, taking care of orphans etc. KEMRI CDC has also come in with house-to-house HIV testing, which helps test both husband and wife and is cheap because people don't need fare to go to a VCT centre (voluntary counseling and testing centre). So the NGOs have helped us a lot.
The government has also helped us by bringing about the community strategy plan, of which I am a member. The program helps in cleaning the environment, ensuring security, educating the young people on being independent, helps distribute aid, etc.

Question: So most of the NGO projects are geared towards helping the sick?
Answer: Yeah. The sick, security – like the community strategy. Say like there is a lot of insecurity down here, we have to look for the person in charge and find a solution as a team.

Question: So, most help comes from within yourselves and little from the government?
Answer: Yeah, very little from the government.

Question: How about on roads and electricity, has the government been helping?
Answer: We have roads and power; you can see the wiring all over.

Question: Has this been done by the government or NGOs?
Answer: I think it's the government through the rural electrification program. Although everyone did not benefit, a few people benefitted. For some people like myself, we get bills yet we are not even connected! We don't understand why.

Question: And have the roads been expanded or they are the same?
Answer: The roads are the same. And we also contribute to their reduced sizes. Say like I am selfish, so if my room is two roomed, and I want to extend to have a kitchen space, my neighbor does the same and at the end we close off the road – in which case even the fire extinguisher can't get here. From the main road, the road is wide enough but it gets very narrow when it gets here. Yet it becomes a big quarrel if you tell someone to move from the reserve. But we are always complaining that the government is not doing this and that yet we are ones who are to blame. You even find that we don't have enough toilets, yet the land set aside for that was grabbed by the responsible/appointed leaders. This in extension means I have to build the toilet next to my house, and in turn close the road, and my neighbor does the same. So the whole road gets closed off.

Question: So from the development trends, people have been building new houses. Would you say there are places people have been unable to build say because of their being flood prone, steep slopes etc.?
Answer: Steep slopes?

Question: Yeah, say like they have been unable to construct because of steep slopes.
Answer: No.

Question: I mean for example, I have realized there are places where people have not built on.
Here at Kosovo people have built into the river, such that if you want to pour water you pour right into the river. If we were to leave the 30m buffer, so many people would be displaced.
Answer: I don't think it applies here in Kosovo.

Question: I was walking down Kosovo one day and I realized there are places which are flood prone and where people have not built on. There is a place people have planted sugar cane and eucalyptus trees where no buildings have been put up.
Answer: Yeah, there is a place where people have not built where a certain youth groups do farming in rotational basis. The space was even being built on but the youth refused saying there are no jobs and that they needed some space to earn an income from.

Question: So it's not that people don't want to build there. It's the youths who have refused them from being constructed on?
Answer: Yeah, the youths have refused.

Question: You have lived here for long and have seen the changes through time. Which are the major changes you have witnessed?
Answer: The main change I can say is an increase in the population because when I was born there were not this many people. We used to live across there but now we are so many and people are continually giving birth.

Question: And have the houses changed?
Answer: People keep on changing, but it's not major changes.

Question: Like here people are now building storied housing
Answer: That is more a kind of progress because in the past our parents used to construct using cartons, then iron sheets and mud, then the mud disappeared to only iron sheets. So the storied housing also came up but there

also was the fire problem. The storied houses posed serious threat from fire because extinguishing them would be very hard when timber is used as the separation between floors. So the local leadership introduced a regulation against timber housing and instructed that if someone wants to build a storied house in your plot, you have to start with stone/blocks and then you can use stone or iron sheets in the top floors. Whichever the way, no one is allowed to use timber/wood in upper floors.

Question: And have the roads changed?
Answer: I just told you the roads are getting narrower.

Question: And how have the changes been affecting you?
Answer: It's affecting us because in the case of fire we don't have access roads for fire engines. One has to take out their belongings in order to save them because vehicles can't get in here. Even then, when everyone is rushing to move their things there is commotion and it becomes very hard to salvage anything. Same applies to when people fall sick and are in need of emergency attendance. In that case, you have to move someone all the way to where vehicles can access. From the look of things, even this road here will be no more.

Question: Has this been affecting the area security wise?
Answer: Yes because, if this lady rents out her house and continues to extend the house further, while the young guys renting out rooms is not employed, the young ones will start robbing people (*meaning that an increased number of rooms brings together more young people who are not employed and who need to find money to pay their rent, in extension pushing them to crime*). This also contributes to narrowing of the road

Thank you very much for your time.

Bibliography

Abbott, J. "An Analysis of Informal Settlement Upgrading and Critique of Existing Methodological Approaches." *Habitat International* 26, no. 3 (September 2002): 303–315.

Addison, Tony. Underdevelopment, Transition, and Reconstruction in Sub-Saharan Africa. Helsinki: UNU World Institute for Development Economics Research, 1998.

Amis, Philip. "Introduction: Key Themes in Contemporary African Urbanisation." Housing Africa's Urban Poor. Eds. Philip Amis and Peter Lloyd. Manchester: Manchester University Press for the International African Institute, 1990.

Anderson, Nels. "Urbanism and Urbanization." *American Journal of Sociology* 65:1 (July 1959): 68-73.

Anonymous. "Kenya's Ethnic Groups." Africa Research Bulletin: Political, Social and Cultural Series 44:12 (January 2008): 17331A.

Aradeon, David. "Festac '77: African Architectural Technology Exhibition." *The International Secretariat.* Lagos: The Secretariat, 1977.

Aradeon, David. "Architecture." The Living Culture of Nigeria. Ed. Saburi O. Biobaku. Lagos: T. Nelson, 1976.

Aradeon, David. Architecture: The Search for Identity and Continuity: An Inaugural Lecture Delivered at the University of Lagos on Wednesday, 11th February, 1998. Lagos: University of Lagos Press, 1998.

Aradeon, David. "Architecture and Lifestyle." Handbook of Nigerian Culture. Ed. Frank Aig-Imoukhuede. Nigeria: Department of Culture, Federal Ministry of Information and Culture, 1992: 92-96.

Aradeon, David. "Unmaking of Tradition." *Glendora Review: African Quarterly on the Arts* 1:3 (1996): 72-85.

Barnes, Sandra T. "Public and Private Housing in Urban West Africa: The Social Implications." Housing the Urban Poor in Africa. Eds. Minion K.C. Morrison and Peter C.W. Gutkind. Syracuse: Maxwell School of Citizenship and Public Affairs, Syracuse University, 1982.

Chasin, Noah. "He's Been with the World: Aldo Van Eyck's Ethnographic Gambit." *Architecture and Ideas = Architecture et Idees* 2:1 (Winter-Spring 2000): 24-41.

Dafe, Florence. "No Business like Slum Business? The Political Economy of the Continued Existence of Slums: A Case Study of Nairobi." Development

Studies Institute Working Paper Series, February 2009. http://www2.lse.ac.uk/internationalDevelopment/pdf/WP98.pdf.

Dignitas Project. Community Profile Research Report: Mathare Valley, Nairobi, Kenya. June 2008. http://dignitasproject.org/documents/studies/200806-CommunityProfile.pdf.

Duarte, PGB. "Informal settlements: a neglected aspect of morphological analysis." Urban Morphology 13:2 (October 2009): 138-139.

Dwyer, D. J. People and Housing in Third World Cities: Perspectives on the Problem of Spontaneous Settlements. London ; New York: Longman, 1975.

Elleh, Nnamdi. African Architecture: Evolution and Transformation. New York: McGraw-Hill, 1997.

Epstein, A.L. "Urbanization and Social Change in Africa." *Current Anthropology* 8:4 (October 1967): 275-295.

Fage, J.D. Ghana: A Historical Interpretation. Madison: The University of Wisconsin Press, 1966.

Fischer, Claude S. "On Urban Alienations and Anomie: Powerlessness and Social Isolation." *American Sociological Review* 38:3 (June 1973): 311-326.

Foster-Carter, Aidan. Sociology of Development. Ormskirk, Lancashire: Causeway, 1985.

Gardi, Rene. Indigenous African Architecture. Trans. Sigrid McRae. New York: Van Nostrand Reinhold, 1974.

Government of Kenya Ministry of Housing." Kenya Slum Upgrading Programme (KENSUP)." 2011. http://www.housing.go.ke/?p=124.

Gulyani, Sumila. "Inside Informality: Poverty, Jobs, Housing and Services in Nairobi's Slums." Accessed July 21, 2012. http://siteresources.worldbank.org/INTKENYA/Resources/Inside_Informality.pdf

Hamdan, G. "Capitals of the New Africa." *Economic Geography* 40:3 (July 1964): 239-253.

Harris, Richard. "A Double Irony: The Originality and Influence of John F.C. Turner." *Habitat International* 27, no. 2 (June 2003): 245–269.

Harvey, David. 'The Sociological and Geographical Imaginations." *International Journal of Politics, Culture, and Society* 18:3-4 (2004): 211-255.

Hess, Janet Berry. "Imagining Culture: Art and Nationalism in Ghana." Diss. Harvard University. 1999.

Kigochie, Petronella W. “Squatter Rehabilitation Projects that Support Home-Based Enterprises Create Jobs and Housing: The Case of Mathare 4A, Nairobi.” *Cities* 18: 4, (August 2001): 223-233.

Kit, Oleksandr, Matthias Lüdeke, and Diana Reckien. “Texture-based Identification of Urban Slums in Hyderabad, India Using Remote Sensing Data.” *Applied Geography* 32, no. 2 (March 2012): 660–667.

Kudiabor, C.D.K. “Urbanization and Growth Pole Strategy for Regional Development in Ghana.” Regional Planning and National Development in Tropical Africa. Mabogunje, Akin L. and Adetoye Faniran, eds. Ibadan, Nigeria: Ibadan University Press, 1977.

Lang, Robert. *Edgeless Cities: Exploring the Elusive Metropolis*. Brookings Metro Series. Washington, D.C: Brookings Institution Press, 2003.

Macharia, Kinuthia. "Kenya." Encyclopedia of Race, Ethnicity, and Society. Ed. Richard T. Schaefer. Vol. 2. Thousand Oaks, CA: Sage Publications Inc., (2008): 802-804.

Mabogunje, Akin L. Cities and African Development. Ibadan, Nigeria: Oxford University Press, 1976.

Mabogunje, Akin L. The Development Process: A Spatial Perspective. New York: Holmes and Meier, 1981.

Mabogunje, Akin L. End of the Beginning: Reflections on the Development Crisis in Sub-Saharan Africa. Harvard Africa Lecture. Cambridge, MA: Committee on African Studies, Harvard University, 1987.

Mabogunje, Akin L. and Adetoye Faniran. Regional Planning and National Development in Tropical Africa. Ibadan, Nigeria: Ibadan University Press, 1977.

Mabogunje, Akin L, and International Council of Scientific Unions. *Shelter Provision in Developing Countries: The Influence of Standards and Criteria*. SCOPE ; 11. Chichester ; New York: Published on behalf of the Scientific Committee on Problems of the Environment of the International Council of Scientific Unions [by] Wiley, 1978.

Migdal, Joel. “Urbanization and Political Change: The Impact of Foreign Rule.” *Comparative Studies in Society and History* 19:3 (July 1977): 328-349.

Morrison, Minion K.C. “Introduction: Housing Issues and Policies in Contemporary African Societies.” Housing the Urban Poor in Africa. Eds. Minion K.C. Morrison and Peter C.W. Gutkind. Syracuse: Maxwell School of Citizenship and Public Affairs, Syracuse University, 1982.

Mundia, C. N.Aniya, M. 2005. "Analysis of land use/cover changes and urban expansion of Nairobi city using remote sensing and GIS." International Journal Of Remote Sensing 26, no. 13: 2831-2849.

National Housing Corporation. "About Us." Last modified 2009, http://www.nhckenya.co.ke/index.php?option=com_content&view=article&id=15&Itemid=3.

Neuwirth, Robert. Shadow Cities: A Billion Squatters, A New Urban World. New York: Routledge, 2005.

Obudho, R.A. and Salah El-Shakhs. Development of Urban Systems in Africa. New York: Praeger, 1979.

Obudho, R.A. and Constance C. Mhlanga. "The Development of Slum and Squatter Settlements as a Manifestation of Rapid Urbanization in Sub-Saharan Africa." Slum and Squatter Settlements in Sub-Saharan Africa. Eds. R.A. Obudho and Constance C. Mhlanga. New York: Praeger, 1988.

Okoye, Ikem Stanley. "Architecture, History, and the Debate on Identity in Ethiopia, Ghana, Nigeria, and South Africa." *Journal of the Society of Architectural Historians* 61:3 (September 2002): 381-396.

Oliver, Paul. Shelter in Africa. New York: Praeger Publishers, 1971.

Paden, John. "Housing the Urban Poor: Design and Public Policy Issues in West Africa." Housing the Urban Poor in Africa. Eds. Minion K.C. Morrison and Peter C.W. Gutkind. Syracuse: Maxwell School of Citizenship and Public Affairs, Syracuse University, 1982.

Pamoja Trust. Nairobi Slum Inventory. Nairobi: Self-published by Urban Poor Fund International, Pamoja Trust, and Slum Dwellers International (SDI), 2011.

Pellow, Deborah. Ghana: Coping with Uncertainty. Boulder, CO: Westview Press, 1986.

Pellow, Deborah. Landlords and Lodgers: Socio-spatial Organization in an Accra Community. Westport, CT: Praeger, 2002.

Pellow, Deborah, ed. Setting Boundaries: The Anthropology of Spatial and Social Organization. Westport, CT: Bergin & Garvey, 1996.

Population Statistics. "Historical Demographical Data of the Whole Country." Last modified May 13, 2003, http://www.populstat.info/Africa/kenyac.htm.

Scruggs, Greg. "Nairobi Notebook: KENSUP Pilot in Kibera." Next American City, April 22, 2010, http://americancity.org/daily/entry/nairobi-notebook-kensup-pilot-in-kibera.

Sheuya, Shaaban. "Urban Poverty and Housing Transformations in Informal Settlements: The Case of Dar-es-Salaam, Tanzania." *International Development Planning Review* 31, no. 1 (March 1, 2009): 81–108.

Smith, Michael E. "Editorial—Just How Comparative Is Comparative Urban Geography? A Perspective from Archaeology." *Urban Geography* 30, no. 2 (February 1, 2009): 113–117.

Smith, Michael E. "Empirical Urban Theory for Archaeologists." *Journal of Archaeological Method and Theory* 18, no. 3 (October 16, 2010): 167–192.

Stren, Richard E. "Urban Housing in Africa: The Changing Role of Government Policy." Housing Africa's Urban Poor. Eds. Philip Amis and Peter Lloyd. Manchester: Manchester University Press for the International African Institute, 1990.

Tipple, A. Graham. Housing Supply in Ghana: A Study of Accra, Kumasi, and Berekum. Progress in Planning 51 (4). Oxford: Pergamon Press, 1999.

Tipple, A. Graham. "The Need for New Urban Housing in Sub-Saharan Africa: Problem or Opportunity." *African Affairs* 93, no. 373 (October 1, 1994): 587–608.

Turner, John C. "Housing Priorities, Settlement Patterns, and Urban Development in Modernizing Countries." *Journal of the American Institute of Planners* 34, no. 6 (1968): 354–363.

Turner, John F. C. *Freedom to Build; Dweller Control of the Housing Process*. New York: Macmillan, 1972.

Turner, John F. C. *Housing by People: Towards Autonomy in Building Environments*. 1st American ed. New York: Pantheon Books, 1977.

United Nations Environment Programme. Kenya: Atlas of Our Changing Environment. London; Earthprint, 2009.

United Nations Human Settlements Programme. *The Challenge of Slums: Global Report on Human Settlements 2003*. London ; Sterling, VA: Earthscan Publications, 2003.

United Nations Human Settlements Programme. *Cities in a Globalizing World: Global Report on Human Settlements 2001*. London ; Sterling, VA: Earthscan Publications, 2001.

United Nations Human Settlements Programme. *Financing Urban Shelter: Global Report on Human Settlements 2005*. London ; Sterling, VA: UN-HABITAT/Earthscan, 2005.

United Nations Human Settlements Programme. *Planning Sustainable Cities: Policy Directions: Global Report on Human Settlements 2009*. Abridged

ed. London ; Sterling, VA : Nairobi, Kenya: Earthscan ; United Nations Human Settlements Programme, 2009.

United Nations Office of the High Commissioner for Human Rights. *Fact Sheet No. 21: The Right to Adequate Housing*. Revision 1. Geneva: United Nations, 2010.

Wildish, Janet. "Government Support for 'Private Schools for the Poor': A Case Study in Mathare Informal Settlement, Kenya."University of Maryland, College Park, 2011, http://ezproxy.lib.utexas.edu/login?url=http://search.proquest.com/docview/880288558?accountid=7118 (accessed August 7, 2012).

Weeks, John R., Allan Hill, Douglas Stow, Arthur Getis, and Debbie Fugate. "Can We Spot a Neighborhood from the Air? Defining Neighborhood Structure in Accra, Ghana." *GeoJournal* 69, no. 1_2 (2007): 9–22.

Wekesa, B.W., G.S. Steyn, and F.A.O. (Fred) Otieno. "A Review of Physical and Socio-economic Characteristics and Intervention Approaches of Informal Settlements." *Habitat International* 35, no. 2 (April 2011): 238–245.

Wekesa, B.W., G.S. Steyn, and F.A.O. Otieno. "The Response of Common Building Construction Technologies to the Urban Poor and Their Environment." *Building and Environment* 45, no. 10 (October 2010): 2327–2335.

Werlin, Herbert. "Improving Squatter Settlements in Africa: The World Bank Experience." Slum and Squatter Settlements in Sub-Saharan Africa. Eds. R.A. Obudho and Constance C. Mhlanga. New York: Praeger, 1988.

World Bank Group. Accelerated Development in Sub-Saharan Africa: An Agenda for Action. Washington, D.C.: World Bank, 1991.

Wheatley, Paul. "The Significance of Traditional Yoruba Urbanism." *Comparative Studies in Society and History* 12:4 (October 1970): 393-423.

White, L.W. Thornton, L. Silberman, and P.R. Anderson. Nairobi: Master Plan for a Colonial Capital. London: His Majesty's Stationery Office, 1948.

Vita

Lauren Sheagbe Flemister was born in Columbus, Ohio to Liberian parents, Ernestein and Clifford. After spending formative years in Columbus, Lauren went on to attend Princeton University and obtained her A.B. in Architecture with High Honors. She wrote her undergraduate thesis on architectural practices in West Africa and its impact on development and culture. She subsequently attended the University of Texas at Austin and received her Master of Architecture. After working for a couple years at a multinational architecture firm, Lauren returned to school to pursue her interest in low-income and internationally-focused urban planning. This report is in completion of her masters' dual degree program in Community and Regional Planning and Public Affairs.

Permanent email: lauren.flemister@utexas.edu

This report was typed by Lauren Sheagbe Flemister